THE JOURNAL
OF
Foreign Medical Science
AND
LITERATURE.

VOL. II. JULY, 1822. No. 7.

Selected Papers.

Outline of an Inquiry on the Pathology of Consumptive Diseases.

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PART II.

(From the Edinburgh Medical and Surgical Journal for January, 1822.)

From the facts which were stated in the former part of this Inquiry, it appears that cough, purulent expectoration, hectic fever and wasting, do not necessarily constitute the true consumption of the lungs. On the contrary, there is every reason to believe that all these symptoms may proceed from various other morbid affections; some of them as untractable as the true consumption, but others affording a much more favourable prognosis; and that all of them may be fatal with the usual symptoms of consumption, and yet the substance of the lungs be found entirely free from disease. Farther, it is in the highest degree probable that suppuration may take place in the substance of the lungs themselves; that the matter may be spit up, and the abscess heal as favourably as a healthy abscess in any other part of the body. This favourable termination does not, indeed, take place in every case of this kind; for the disease may be so extensive, and the strength of the patient so reduced, that he may sink under the most healthy suppuration of so important an organ; but, in the history of this affection, we see enough to fix a marked and decided distinction between it and that unhealthy ulceration which constitutes consumption.

This important difference is often referred to the scrofulous habit: but it does not appear that the existence of a scrofulous taint necessarily gives to ulceration an unhealthy character. This important principle may be inferred from a variety of re-

markable facts. A scrofulous gland may be extirpated, and the wound heal favourably; whereas, had it been allowed to advance to suppuration, the ulcer would have been most unhealthy. After the amputation of a scrofulous limb, the stump may heal as favourably as in the soundest constitution: and even in the same person, at the same time, we may observe scrofulous ulceration existing in one part of the body, and, in another part, the most healthy suppuration. Blisters and issues in a scrofulous habit do not necessarily produce scrofulous sores; but, on the contrary, we often find difficulty in procuring from them that discharge which we wish to produce. I had lately under my care a gentleman who was affected with a disease of the knee, accompanied by a running sore decidedly of a scrofulous character. While this was going on, without any appearance of amendment, he sustained a considerable injury of his hand, by a contused and lacerated wound. In such a constitution I greatly dreaded the result; but the wound healed as favourably as possible, leaving the disease of the knee entirely unchanged.

In the cases now referred to, therefore, it is probable that the unhealthy ulceration did not depend upon constitution simply, but upon certain changes which had taken place in the structure of the affected parts themselves; and these changes seem to admit of considerable and important varieties in degree in different cases, and in the same case at different times. These varieties we observe most remarkably in the lymphatic glands, when they become enlarged, in connexion with an unfavourable taint in the constitution. They may be simply enlarged, with their internal structure soft, fleshy, and highly organized; in the next degree, we find them more indurated, and less organized; then succeeds a firm whitish substance, which seems to possess much less organization; and then the white cheesy matter, well known in connexion with scrofulous ulceration of the most untractable kind. With these varieties appear to be connected important differences in the progress of these affections. In the first degree, it is probable that the enlargement of the glands may frequently increase and diminish, and often disappear. In another form, they become permanently enlarged. All the varieties may advance to suppuration; but with important diversities in the progress and the character of it. The more organized probably advance more rapidly, and suppurate more favourably; the less organized advance more slowly, and leave more untractable sores.

The ulceration of the substance of the lungs which constitutes true consumption, seems to derive its peculiarly unhealthy character from certain morbid changes which had previously taken place in the affected parts; and, in tracing these changes, we observe varieties considerably analogous to the diversities now

referred to in the diseases of lymphatic glands. Whether these are distinct affections, or different stages of the same disease, it is perhaps impossible to ascertain; but the facts are worthy of minute observation, and appear to bear an important relation to the pathology of consumption.

When we investigate minutely these morbid conditions, they seem to be referrible to the following heads.

I. *The White Tubercle.*—This substance is usually found in round nodules, varying in size from that of a large pin-head to the size of a walnut. They are usually in clusters of various extent, and, when examined individually, they appear to be in some cases enclosed in distinct sacs; in others, to lie more loosely in the cellular texture of the lungs. They are, in some cases, very few in number, perhaps only one or two, imbedded in sound pulmonary substance; in other cases, a great extent of the lungs seems to consist entirely of a continued series of them so closely impacted together, that the proper pulmonary structure has entirely disappeared. In their internal structure, they present a whitish or ash colour, and various degrees of consistency. In some cases they cut smooth and firm like soft cartilage, or the substance of scirrhus; in others, they present a firm cheesy substance; in others, a soft cheesy matter; and, at last, we find them in a pulpy state, or presenting the appearance of a partial and unhealthy suppuration. When cut across in their firm state, minute openings may sometimes be observed in them; but these do not appear to be blood-vessels, for they have not been found to admit any injection from the arteries of the lungs. The white tubercles seem to possess a very slight degree of organization, and to pass very slowly into the state of suppuration. This change seems, in general, to commence in the centre, and to advance very slowly through the substance of them. In the end they are often entirely softened or suppurated, and the matter finds an outlet by a branch of the bronchiæ. In some cases, it is probable that the communication with the bronchiæ takes place while the process of suppuration has but partially advanced, and that the purulent matter is spit up gradually as it is produced; but in others, there is reason to believe that the whole contents of a tubercle are brought up in masses partially suppurated, so as to empty the sac in a very short time. When, in either way, the sac has been emptied, it is probable that in some cases an ulcerative process continues in it, and that the formation of matter goes on; in others, there is reason to believe that the sac may then pass into a healthy state, forming a small cavity communicating with the bronchial canals, but without any morbid action. This most important point will be more particularly referred to in the sequel. The ap-

pearances now referred to can only be observed when the tubercles are few in number—are enclosed in proper sacs—and are surrounded by pulmonary substance in a tolerably healthy state. The cases which we more commonly meet with present such a mass of unhealthy ulceration, as bids defiance to every attempt at minute observation.

II. *The Semitransparent Tubercle.*—This variety presents the appearance of numerous small bodies, seldom exceeding the size of a grain of wheat, of a semi-pellucid appearance, and firm consistence like soft cartilage. They are comparatively of rare occurrence, and they have not been sufficiently investigated. There is some reason to believe that, at a certain period of their progress, they become opaque.

III. *The Fleshy Tubercle.*—These also have been little investigated; but they appear to constitute either a form or a period of the disease quite distinct from the two former. They present the appearance of numerous bodies, like peas; soft and fleshy in their structure; exhibiting, when cut across, a reddish colour, and a consistence resembling the substance of the kidney, or the mesenteric glands in their state of simple enlargement. This variety of tubercles, I think, has been little attended to, and they are certainly of rare occurrence. I have observed them chiefly in the lungs of children, and I am quite satisfied of their existence.

IV. *The Black Degeneration of the Lungs—the Melanosis of the French writers.*—This sometimes appears in nodules like tubercles; and sometimes an irregular portion of the lung, of considerable extent, is affected with it. It is very firm; of a uniform black colour; in some cases it has been compared to the consistence of half-burnt leather.

V. *The Simple Hepatised Induration of the Lung.*—This may exist in a great extent, without the slightest appearance of tubercles. It presents a uniform solid mass, of a reddish colour, and varying a little in its texture, being in some cases granular, like the substance of the liver; in others more fleshy, like kidney. The natural cellular texture of the lung has entirely disappeared. It varies much in extent, being in some cases in small irregular masses, in others affecting a great extent of the lung.

The various morbid structures now referred to are sometimes found quite unconnected with each other; tubercular masses, for example, surrounded by the pulmonary substance in a healthy state, or the hepatised induration of the pulmonary substance, without any appearance of tubercle. But in general we find them more or less combined. When the diseased lung in these cases is cut across, it presents a variegated surface, white,

red and black, in which the various morbid conditions are blended irregularly, as the firm white tubercle, blended with small flesh-coloured nodules at one place, and with black portions at another; or the hepatised induration, with white or black tubercles interspersed through it; in some cases a portion of pulmonary substance, tolerably healthy, may occasionally intervene; in others, there is an extensive mass uniformly indurated, but presenting, when cut into, this variegated structure —in some places solid—in others interspersed with small abscesses; and, in the advanced stages, we find extensive cavities of ragged unhealthy ulceration, with only an outer shell remaining of the indurated substance.

The morbid condition which is thus formed is in some cases confined to small portions of the lungs; but in others is much more extensive, affecting perhaps the whole of one lung, and sometimes nearly the whole of both. The indurated part appears to be quite unfit for the function of respiration; and, when it is minutely examined, it is generally found that the blood-vessels of it are very much diminished in size, often obliterated; and this appears to be occasioned by the disposition of a firm substance which fills up their cavities. Dr. Stark found that a vessel which, at its origin, was as large as half an inch in circumference, frequently could not be traced above an inch, being then obliterated; and in a case by Portal, in which he was desirous of injecting an indurated lung, he could not find, in any part of it, a vessel large enough to admit his smallest injecting tube. In some cases, again, while the branches have been thus diminished or obliterated, the trunk of the pulmonary artery has been found dilated like an aneurism. The air vessels become contracted and obliterated in the same manner as the blood-vessels.

A portion of lung which is thus indurated becomes, of course, unfit for the purposes of respiration; but it may remain long, perhaps in some cases through life, in a dormant state, that is, without passing into any farther state of disease. If it be of small extent, it may produce little or no uneasiness; but if the extent of it be considerable, it must impede the circulation through the lungs, as it is nearly impervious to the blood from the pulmonary artery. Hence it is likely to produce dyspnœa, and, in the end, give rise to hydrothorax. But a mass of this kind is very prone to farther disease—to a low inflammatory action of a peculiarly unfavourable kind—and to a peculiarly unhealthy ulceration as the result of it:—and there are some points deserving minute investigation in regard to the effects of inflammation on the various structures of which the mass is generally composed. It seems doubtful whether the proper white tubercle be susceptible of inflammatory action. It ap-

pears to undergo a change peculiar to itself, by which its contents are gradually softened, until they at last degenerate into an ill-conditioned pus. Though the tubercle itself, however, be insusceptible of inflammation, it is probable that this process is accelerated by inflammation affecting the surrounding parts; but, in general, the tubercle seems to pass very slowly into the state of ulceration, and the ulceration to extend very slowly over the neighbouring parts. Hence the symptoms in such cases are not acute, and their progress is very slow; and, even after the disease has been of considerable standing, we may find, on dissection, but a few small vomicæ amid the mass of tubercular disease. The hepatised induration, on the other hand, appears to be highly susceptible of inflammatory action, and, under the influence of it, seems to run rapidly into extensive ulceration of a peculiarly unhealthy kind, presenting appearances remarkably different from the tubercular ulceration, and forming a modification of the disease remarkably different from the pure tubercular consumption. The symptoms are more severe at their commencement, and their progress much more rapid, the case perhaps being fatal in three or four weeks; and we find, on dissection, a dark-coloured induration of the lung, with a large cavity lined by ragged ulceration, as if a large portion had been forcibly torn out. This most important modification of the disease will be more particularly referred to in the sequel.

This induration of the substance of the lungs appears to form the basis of the pathology of consumption. Researches calculated to illustrate the subject must be directed to the nature and origin of the induration—the nature of the various structures which enter into the composition of it—the peculiar changes which they undergo—the varieties which occur in the disease, according as one or other of these structures may predominate in the mass, and as one or other of them may be the primary seat of the morbid action in the ulcerative stage of the disease, or the stage which immediately precedes the ulceration. The inquiry is difficult, and most extensive; much patient investigation, and numerous and accurate observations will be required, before much light can be thrown upon it, and before we shall be ready for any general conclusions; but it promises the most important results in regard to the pathology of consumption.

In attempting a few observations on this important subject, I do not profess to offer any thing new or original. I aim only at such an outline as may include the most important facts in the pathology of the disease, and those points particularly which stand most in need of being investigated by extensive observation. In a practical view, these points may be referred to the following heads.

SECT. I.—*There is reason to believe that an Indurated Mass, of the kind which has been alluded to, may exist in the Lungs, and may remain dormant for a long time, perhaps through life, without producing any alarming symptoms.*

This seems to occur chiefly when the induration is not extensive, and is distinctly circumscribed, and when the remainder of the lung is in a tolerably healthy state. But, in some cases of this kind, the disease has been found very extensive. In a woman mentioned by Bayle, who died suddenly in the cold stage of an intermittent, after labouring under the disease for six weeks, there was found most extensive induration and tubercular disease of the lungs, though there had been no pulmonary symptom, but slight dry cough for the last fortnight. In a young man, mentioned by the same writer, who died of typhus, there were numerous tubercles in the lungs, some of them as large as filberts, and around them the pulmonary substance was red and dense. In a man aged 80, who died of an affection of the brain, Morgagni found a mass of induration in the left lung, in which all the vessels of the lung appeared obstructed and dry: And in an old woman mentioned by Morton, who died, gradually exhausted by urinary complaints with which she had been affected for twenty years, there were found much disease of the kidneys and bladder, and extensive tubercular disease of the lungs. It is unnecessary to multiply examples of this kind, as they must have occurred to every one who is conversant with morbid anatomy.

A person in whom such a mass of disease exists is in a precarious state, as there is both a great disposition to an extension of the disease, and a tendency to pass into ulceration of an unhealthy character. The latter seems to be the result of inflammatory action of a low insidious kind; and to this the diseased mass, or the parts surrounding it, appear to be extremely liable, from slight causes. It is probable that it may commence either in the substance of the mass—in the pulmonary substance near it—in the pleura covering it—or in the bronchial membrane most nearly connected with it. Hence the first symptoms may assume the characters of slight peripneumonia, pleuritis, or catarrh; but in either case terminate by bringing the mass into a state of activity. The patient is extremely liable to be affected by cold; and upon every attack from such exposure, there is usually a fixed point to which he refers his uneasiness, or, according to a mode of expression frequently employed, "the slightest cold always seizes him in that spot." The symptoms usually are, pain in the part, more or less acute, and more or less affected by inspiration, cough, and frequently slight hæmoptysis; such attacks frequently subsiding under the

appropriate treatment, and as often recurring upon the next exposure, until at length one of them terminates in that unhealthy ulceration which constitutes consumption. Much is to be done here by active, judicious treatment, and much by avoiding the exciting causes of these attacks; and it is in this state of the disease that removal to an equable climate, if adopted at the proper period, may be recommended as a remedy of real efficacy. In the cases now referred to, a part only of the morbid mass is the true tubercle, and it seems doubtful whether this be susceptible of active inflammation; but its peculiar change to a softened state of unhealthy suppuration appears to be accelerated by inflammatory action affecting the parts surrounding it. It may, however, undergo this change gradually and insidiously, without any inflammatory symptoms, giving rise to a form of the disease the most untractable, the least under the influence of any remedy, and generally hopeless.

SECT. II.—*On the other hand, the Induration may be so extensive as to prove fatal, without advancing to Ulceration.*

The symptoms in these cases usually are, frequent harassing cough, without expectoration, or with scanty mucous expectoration from the bronchial membrane, short uneasy breathing, frequent pulse, in some cases distinct hectic paroxysms, diarrhœa, and death by gradual wasting. The bowels frequently become affected at an early period, and the ulceration of the mucous membrane of them seems in some of these examples to be the immediate cause of the rapid exhaustion and death. A man mentioned by Broussais had dry cough, with frequent pulse, and slight uneasiness in breathing, which affected him chiefly when he walked. After some time he had diarrhœa, with rapid wasting and œdema of the legs, and died after an illness of five months and a half. Both lungs were full of tubercles without any suppuration; and the right was, besides, extensively hepatised. There were small round black ulcers in the colon, and the mucous membrane near them was inflamed and thickened. Another man, mentioned by the same writer, died with nearly the same symptoms, after an illness of six months. The right lung was found extensively hepatised, and full of innumerable tubercles, some of which were very large, and contained a white matter in the centre. The left lung was less hepatised, but equally full of tubercles as the right; there was no ulceration in either. There was tubercular disease also in the liver and in the spleen. The mucous membrane of the colon was inflamed and ulcerated. A man mentioned by Bayle had obstinate dry cough, hectic fever, and night sweats; then mucous expectoration of an opaque white, anasarca, and colli-

quative diarrhœa, and died completely emaciated about a year from the commencement of the cough. There was no ulceration of the lungs, but extensive induration, with numerous small tubercles; there was ulceration of the mucous membrane of the cæcum.

This tendency to ulceration of the mucous membranes is a remarkable feature in all the forms of consumptive diseases; and in many cases it appears to be the fatal disease, while the original affection is stationary, or has not made much progress. It is observed in the mouth, the nose, the œsophagus, the stomach, the bowels, and in the trachæa; and I think I have observed it in the urinary bladder. The most common seat of it is the cæcum, or the lower end of the ileum; but it is met with through the whole intestinal canal, producing diarrhœa of a most untractable kind, which reduces the strength very rapidly. It is not confined to cases of true consumption, but may exist in connexion with most of the affections formerly referred to. A girl mentioned by Bayle had short dry cough for six months, then diarrhœa and great emaciation, and, after six months more, died with symptoms of acute inflammation of the lungs. On dissection, the lungs exhibited only the usual appearances of recent inflammation, but were otherwise healthy; the glands at the root of the lungs were enlarged, but not suppurated; and there was ulceration of the mucous membrane of the intestine. In a remarkable case by Prost, there was ulceration of the ileum, combined with ulceration of the larynx, fatal in a month, without any disease of the lungs.

This modification of the disease however may be fatal, without the affection of the bowels, as in a case by Bayle, which was fatal in three weeks, with dry cough and difficult breathing—the patient dying suddenly in a fit of suffocation. The only morbid appearance was most extensive tubercular disease of the lungs, of that kind which he calls the granular species, without any suppuration. A man mentioned by Broussais had severe cough, with pain under the ensiform cartilage, and in the left side of the thorax, frequent small pulse and rapid wasting, without either perspirations, diarrhœa, or expectoration, except that he began to expectorate a little puriform matter in the last six or seven days of his life. He died in the last degree of emaciation, after several months. The right lung was almost entirely indurated, and full of solid tubercles, some hard, others a little softened. Three-fourths of the left lung was entirely composed of tubercles, many of them as large as eggs, some of them of scirrhous hardness, others fatty, and others full of cheesy matter, dry and brittle; a few of the smaller ones had a soft pulpy matter in the centre, but these were very few. The remainder of the lung was hardened and red. This form of

the disease, therefore, may be fatal without any expectoration, or with very slight mucous expectoration, forced out from the bronchiæ by the mere irritation of coughing; or it may be complicated with some of the other morbid affections formerly referred to, which may occasion a variety in the symptoms. If it be combined with disease of the bronchial membrane, there may be copious expectoration of a puriform character, giving to the case the appearance of the ordinary ulcerative phthisis, though the lungs are found, on dissection, entirely free from ulceration. A man mentioned by Bayle died after a year's illness, having had cough with expectoration which was mucous, in part purulent, and often bloody; he had afterwards fever, night sweats and diarrhœa, and died in a state of extreme emaciation, the expectoration having been at last purulent and very copious. The inferior lobe of the left lung was healthy; the remainder of it had entirely degenerated into a substance fleshy, reddish, and crowded with tubercles, which were white and opaque. They were so numerous that very little space was left for the intermediate fleshy substance. The right lung was in the same state. There was ulceration of the mucous membrane of the cæcum and colon. It is also found in combination with chronic inflammation of the pleura. In a case of this kind by Broussais, there was severe dry cough with pain of the left side —attacks of dyspnœa—febrile paroxysms—œdema—rapid emaciation—at last orthopnœa, and death in three or four months. There was much bloody fluid in the left cavity of the pleura; the left lung was much diminished in size; the upper part of it was almost entirely transformed into dry tubercles; the lower part presented a flabby induration without tubercles; the pleura was red and thickened. The right lung filled the cavity, and adhered throughout; was much hardened and full of tubercles, but without any suppuration. When a lung in this state is attacked by active inflammation, it forms a case of peculiar violence and rapidity, resisting every remedy, and proving fatal, by suffocation, in a very short time.

SECT. III.—*At a period of its progress more advanced than the preceding, this extensive induration may prove fatal with portions of it in a state of suppuration, yet without purulent expectoration, the purulent matter not having yet found its way into the bronchial canals.*

In the following case a disease of this kind was unusually rapid in its progress, and the morbid mass of remarkable extent.

CASE I.—A young lady, aged 13, had been very healthy till the beginning of June, 1819, when she began to be inactive, with loss of ap-

petite; and there was observed, occasionally, a dark purplish flush of her cheeks; her pulse was a little frequent; but she would not allow that she was ill. About the 22d of June, she was first observed to cough, but very slightly; and, for the first time, complained of languor and weakness. On the 24th, there was slight pain of the chest upon taking a full inspiration, but it attracted little attention. On the 25th, she went to the country, where she continued till the 6th of July. On her return, it was found that the cough was rather increased, but the pain was inconsiderable. Her breathing, however, became quick and short, the pulse frequent, with increase of frequency towards evening, and considerable decline of strength. On the 9th, the uneasiness of breathing had increased so much, that a small bleeding was employed (about ℥ vij.) with considerable relief. After it, she could take a breath without pain, in other respects as before. On the 14th, I saw her for the first time. The pulse was then 130; countenance anxious, with a purple flush; breathing quick and short, about 50 in a minute; and pain was complained of on attempting to take a full breath. Was bled to ℥v. with much relief; the pain was removed, and the breathing became less frequent. The cough continued, frequent and short, without expectoration; the pulse 120. From this time the weakness and emaciation increased rapidly, with frequent dry cough, rapid pulse, and occasional quickness of breathing, and without any other change in the symptoms, she died on the 5th of August, all the usual remedies having been employed without benefit. There was, to the very last, no expectoration, except very small quantities of light white mucus, scarcely to be distinguished from mere saliva. *Dissection.*—The lungs did not collapse on opening the thorax. Both lobes, through nearly their whole extent, presented such a mass of disease, that it was difficult to find the smallest portion which exhibited the natural structure. They were uniformly firm and unyielding, like a mass of liver, but harder; and, when cut into, were hard and solid, and of various colours, chiefly a mixture of white, and dark red or brown. The white portions had the appearance and consistence of firm cheese, and lay in irregular masses, of various shapes and various extent, with the firm dark portions interspersed betwixt them. The white portions seemed to predominate in the left lung, and were rather less extensive in the right, though in its structure it was equally dense as the left. In the posterior part of both lungs, there were several small abscesses, two or three of them the size of Spanish nuts; they were full of a thick puriform matter. In the inferior part of the left lung, there was a small portion, about two inches in depth, and extending along a part of the thin edge of the lung, which appeared to be the only part that retained the cellular structure, or had been capable of admitting air. Even in this part, however, there were several small abscesses. The other viscera were healthy.

The amazing extent of disease in this remarkable case—the previous health of the patient—and the rapidity with which it ran its course without expectoration, present points of extreme interest in the pathology of this affection. How little can we

rely on symptoms, in cases of this kind, when we recollect, that, in this young lady, the only permanent symptoms were short dry cough, frequent pulse and emaciation; and that, at an advanced period, she appeared to take a full inspiration without uneasiness, when the portion of lung that was capable of admitting air could not have exceeded a few inches in extent! It is unnecessary to multiply cases of the same kind that are on record. One which excited much attention in France, was that of the Dauphiness, mother of Louis XVI. She was seized with a dry cough, followed, soon after, by slight fever. She wasted; the menses were suppressed; and she fell into a true atrophia, without experiencing either pain in the breast, or any remarkable expectoration, or the least uneasiness in breathing in any posture of the body. In this manner she died, in a state of complete marasmus, after three months illness, much difference of opinion having existed in regard to the nature and seat of her disease. On dissection, there was found extensive induration of both lungs, especially the right, with numerous abscesses.*

SECT. IV.—*When the Diseased Mass is of limited extent, and the remainder of the Lungs in a tolerably healthy state, the case may go on in a much more gradual manner, and with considerable varieties in the symptoms, and in the rapidity with which they advance.*

When the mass is of the pure tubercular kind, of limited extent, and surrounded by healthy parts, the symptoms may go on very slowly and insidiously, and with very little interruption of the functions of the lungs. The two following cases are valuable, from the circumstance of both being fatal by incidental occurrences, while the symptoms were still going on in this slow and obscure form.

CASE II.—An ingenious artist, aged about 30, of a family which had suffered severely from phthisis, had been, for several years, extremely liable to cough, and had frequently expectoration of a purulent appearance; so that he had been long considered as in a very precarious state, and in great danger of consumption. In the beginning of summer 1819, his symptoms continued nearly as they had been for a considerable time; he had cough, and a good deal of expectoration, but his breathing was natural; he could take a full breath without the slightest uneasiness; and, though somewhat reduced in strength, was able to attend to his business. In the beginning of June, being one day much agitated in discussing some business in which he thought himself ill used, he suddenly complained of his head, and his speech became inarticulate. It was on account of this attack that he came under my care, for he had not consider-

* Portal, Anatomie Med. Tom. V.

ed his pectoral complaints as requiring medical assistance. The headach increased, and was referred chiefly to the left side and the back of the head, and the upper part of the neck; the speech continued very indistinct; the pulse from 90 to 96. The usual remedies were actively employed, without relief; he sunk gradually into coma, and died with the usual symptoms of hydrocephalus, in rather more than a fortnight. From the first appearance of these symptoms, the pectoral complaints greatly subsided, and after the first two or three days, entirely disappeared. *Dissection.*—There was extensive effusion in the ventricles of the brain; and the central parts, the fornix, septum lucidum, and a part of the corpus callosum, were broken down into a soft pulpy mass. This appearance also extended into the substance of the brain, where it formed the lateral ventricles. In the upper part of each lung, there was a tubercular mass the size of a small orange, externally very hard, but internally extensively ulcerated. The remainder of the lungs was quite healthy.

Case III.—A gentleman, aged 36, had been, for great part of his life, liable to what was called an "habitual cough," but enjoyed good health until the spring of 1819, when he was partially confined to the house with feverish and catarrhal symptoms; got better by a little confinement; went out (as was supposed) too soon, and "his cold was renewed;" and this happened several times. After being for some time in this state, he began to have paroxysms of fever, which attacked him daily about three o'clock, *p. m.* with all the violence and all the regularity of an intermittent; and the complaint was treated as intermittent by several eminent medical men who had the care of him at that time. He first took bark, and afterwards arsenic; and the attacks subsided gradually, after three or four weeks. During this time he had cough, but so very slight, that it was considered as his "old habitual cough," and not at all connected with his present complaint. In the intervals of the attacks, his pulse was quite natural; but his appetite was bad, and his strength much reduced. After several weeks, these attacks of fever disappeared entirely; he then removed to another part of the country, and improved considerably, but did not get well. His chief complaints were now bad digestion and pain in the right side; the disease was considered by another eminent medical man as an affection of the liver, and a gentle course of mercury was recommended, under which his digestion improved considerably. The same cough still continued, but still so very slight, that it was not considered as a symptom of any importance. In this manner he passed the summer. About the beginning of September, he was affected with huskiness of voice, and some uneasiness about the throat; and another medical man suspected an affection of the larynx. Finally, he came to Edinburgh in the end of September. He was then considerably reduced in flesh and strength; his pulse usually varied from 80 to 90, and was sometimes quite natural. He had very slight cough, which scarcely affected him except in the morning, when he expectorated a good deal of matter, which was partly viscid, and of a clear gelatinous appearance, but with a mixture of an opaque friable matter of a puriform charac-

ter. About this time, also, it was several times slightly tinged with blood. During the day, he frequently did not cough at all; he took a full breath with ease. His nights were rather disturbed, but without any thing like hectic; and, when closely questioned, he admitted that he felt occasionally transient pain in the chest. His debility and emaciation now showed some fixed and extensive disease; and the appearance of the expectoration distinctly referred it to the lungs. With the other usual remedies, immediate change of climate was recommended; and he was advised, in the mean time, to expose himself as little as possible, the weather, by the time he left Edinburgh, in the middle of October, having become extremely cold. The former part of this advice he determined on following, but neglected the latter. He had removed to the west coast, and was ready to embark, when, after a long ride on horseback in a cold day, he was seized with profuse hæmoptysis. After the first attack, the hæmorrhage subsided for two days, and then returned in the night with such violence, that it was fatal in a few minutes. *Dissection.*—Every part of the lungs was in a healthy state, except a well-defined portion at the very lowest and posterior part of the right lobe, occupying the angle formed by the diaphragm with the ribs and the mediastinum. This portion adhered to the ribs; externally, it was hard and very firm; internally, it contained an abscess full of purulent matter. This abscess communicated by a very small opening with a more irregular ulcerated space; and this communicated with the bronchiæ about three inches from the bifurcation. This ulcerated space appeared to have been the source of the hæmorrhage; its internal surface was very irregular; and on several parts of it there were discovered open mouths of blood-vessels. The bronchial tubes over the whole of the lungs were in a great measure filled by coagulated blood. The heart was nearly without blood. The other viscera were sound.

These two cases, particularly the latter, I think extremely valuable, as illustrating the obscurity with which the symptoms may advance when the diseased mass is of limited extent, and is surrounded by pulmonary substance in a healthy state. This obscurity, it is probable, will be greatest when the mass is of the pure tubercular kind, in which the changes advance with little or no active inflammation; and when it is so situated, as not to be much affected by the inflation of the other parts of the lungs. Perhaps some effect may also arise from the mass being so surrounded with induration, as to be completely cut off from inflation itself. In such a case, I think we can easily conceive how considerable disease may go on and advance to ulceration with little cough, and little or no pain or uneasiness in breathing.

SECT. V.—*Whatever importance may be attached to the explanation proposed in the preceding Section, it is an important fact in the history of the disease, that under various conditions of the parts, the affection may go on to a very advanced*

period with very slight and obscure symptoms, and sometimes with scarcely any symptoms indicating pectoral disease.

These cases are generally characterized by gradual wasting, with quick pulse, and obscure hectic symptoms, and may go on in this manner, without the real nature of the disease being ascertained, until purulent expectoration appears a short time before death. Febrile paroxysms, occurring with the regularity of an intermittent, have been the prominent symptoms in some of them, and have gone on for a very considerable time, giving rise to various conjectures in regard to the causes of the paroxysms, until pectoral symptoms appeared at an advanced period. Several cases of this kind have come under my observation. Others have assumed the appearance of disease of the liver. A gentleman mentioned by Portal had loss of appetite, and wasting, without any obvious cause. He had then some degree of yellowness; and, on examination, a tumour was felt in the region of the liver. There was no cough, and no uneasiness in breathing; and the disease was treated as an affection of the liver by Portal and another physician. But the disease increased, with febrile paroxysms and colliquative diarrhœa; and was fatal by gradual wasting, with some uneasiness in breathing, but without the least cough or expectoration. On dissection, the liver was found perfectly sound; the disease was entirely in the lungs, especially the right lobe, which was full of indurations and abscesses; and its substance was so much enlarged that it pressed the diaphragm downwards, and made the liver project considerably from its natural situation.* In a case by Bayle, there was gradual wasting, with loss of appetite, for six months; then cough, with some expectoration and diarrhœa; but, after six or seven weeks the cough ceased entirely, the diarrhœa then continued without any other symptom, and in five or six weeks more was fatal, with extreme emaciation. On dissection, the lungs were found most extensively indurated and impervious to air, with many tubercles and abscesses. About a fourth part of each lobe at the lower part seemed healthy. There were ulceration of the mucous membrane of the ileum at the lower end, and extensive disease of the mesenteric glands.† Another modification of the symptoms occurs in a case by Portal. A stout young man, aged 29, after exposure to great heat and fatigue in hunting, complained of heat over his whole body, and red spots came out on his skin. After some time he had extreme lassitude, and febrile paroxysms, with night sweats; but when he was brought to Paris, at an advanced period of the disease, he had no cough,

* Portal sur la Phthisie Pulmonaire. Tome II. p. 258.
† Bayle, p. 369.

or scarcely any, and no uneasiness in his breast; he had slight hoarseness, and his pulse was extremely rapid. Diarrhœa then came on, and he died in a state of extreme emaciation in less than two months from the first attack, having expectorated a little purulent matter in the three or four last days of his life. On dissection, the right lung was found full of a substance like that which is found in wens, partly firm and white, and partly soft and yellow; there were also several abscesses, which did not appear to communicate with the bronchiæ; the left lung was a mass of suppuration at the lower part, where a considerable part was destroyed; the upper part was full of hard concretions, not suppurated. Many other cases of the same kind are on record. In a girl mentioned by Nonnius, there were extensive suppuration, and extensive destruction of the substance of the lungs, though there had been neither cough nor expectoration. The only symptom had been febrile paroxysms, which assumed the characters of quartan intermittent. In a case by Massa, there was a large ulcer, hollow and putrid, in the left lobe of the lungs; the patient having died of gradual wasting, without any cough, or the least complaint of pain. In some other cases, again, the first symptom that excited alarm has been copious hæmorrhage from the lungs; and the patient being rapidly cut off in this manner, it has been found that extensive disease had been going on previously.

The following case is the most remarkable example that has occurred to me of the subject referred to in this Section—extensive disease of the lungs, with slight and obscure symptoms.

Case IV.—A young woman, aged 25, had an attack of pneumonia in April 1815, which, having been neglected in the beginning, was severe and untractable; and, for several weeks after the urgent symptoms were subdued, cough continued, with short anxious breathing. By care and quietness, however, these symptoms soon disappeared; and, though she continued weak, she had no symptom, except that her breathing was easily hurried by any exertion. During the summer she continued nearly stationary, but in the following winter she improved considerably in strength; her breathing was still easily hurried by exertions, and her pulse commonly about 100; but there was no symptom that indicated any serious disease of the lungs. In spring 1816 there was an increase of debility, with failure of appetite, and small frequent pulse, and an acute pain, which was referred to the spine about the middle of the dorsal vertebræ, a little to the right side; but it did not affect her breathing. In the beginning of May she was considerably better, and able to walk out. One day she walked about a mile, and felt the better for it. On Saturday, 11th May, at night, she was suddenly seized with oppression of breathing, without pain. On Sunday was better; but became worse in the night, with small frequent pulse and rapid failure of strength, and died on Monday morning. *Dissection.*—The right lung was

much wasted in its substance, extensively indurated, and full of abscesses; and in the cavity of the pleura there was a large collection of purulent matter. The left lung was diseased in the same manner, but in a smaller degree. In the cavity of the posterior mediastinum, there was a large collection of pus, of a scrofulous character, mixed with a great quantity of a soft pultaceous substance of a yellowish colour. The matter was in contact with the spine; and five or six of the dorsal vertebræ were extensively carious and so eroded, that large pieces of the bodies of them could be easily broken off with the fingers.

SECT. VI.—*The most interesting question connected with this Inquiry is, Whether after a mass of tubercular disease has become ulcerated, the Ulcer may heal? In other words, Whether the true Consumption of the Lungs may be cured?*

The following case is the only one which has occurred to me that bears directly upon this important point.

CASE V.—A lady, of a family which had suffered from consumption, was seized about the age of 18 with cough, pain of the left side, and other symptoms, which were considered as indicating the commencement of phthisis. An elder sister, whose complaints began in the same manner, had recently died of consumption in the ordinary form; and the symptoms were such as led to the opinion, that this lady was consumptive also. After continuing, however, for a considerable time in a very precarious state, she gradually recovered, and enjoyed good health till the age of 48, when she suffered an apoplectic attack, which left her affected with hemiplegia of the right side. It was on account of this affection that she came under my care in 1817; the hemiplegia being then of several months standing. She made very little improvement, but continued in a helpless state of palsy until August, 1819, when she died suddenly in the night, having been seized with severe dyspnœa about two hours before her death. *Dissection.*—There were several ounces of fluid in the ventricles of the brain, and an extensive apoplectic cyst in the substance of the left hemisphere, which however was quite empty. It was lined by a firm yellow membrane; and the opposite sides of it, though in contact, were quite unconnected, except at a few points where slender bands of the same substance with the lining membrane passed from the one to the other. There was considerable effusion in the thorax, and the bronchial tubes were much loaded with thin frothy mucus. On the lower and outer part of the left lung there was a remarkable depression, as if a portion beneath had been destroyed; and the superficial parts, in consequence, had sunk inwards. This was found to be connected with a mass of tubercular disease, consisting chiefly of the white or ash-coloured tubercle in irregular masses, with some friable matter of a calcareous appearance interspersed through it. The whole was very hard, and without any cavity.

The appearances in this case were such as seemed to favour the supposition, that the tubercular mass had been in state of ulceration, and that the disease had stopped after a considerable portion of the mass had been destroyed. The case, I therefore think, is one of considerable importance; and presents a most interesting subject for farther observation, in which little has hitherto been done. The recovery of a patient, in whom there had been consumptive symptoms, with purulent expectoration, is by no means to be received as evidence on this subject, as these symptoms may arise from various other sources: it is only by an extensive examination of the bodies of those who, after recovering from consumptive complaints, have died of other diseases, that we can hope to arrive at any satisfactory information. In the present state of our knowledge, we have certainly some ground for believing that the disease may be arrested in its progress, after a tubercular mass has advanced to ulceration. Two distinct states of the disease are to be kept in mind in connexion with this Inquiry.

(1.) The one is, when the tubercular disease is in an extensive undefined mass. This is, perhaps, the most unfavourable case, and least likely to do well after it has advanced to ulceration. The mass in such cases generally consists of a variety of structures, possessing various degrees of organization; and the probability of the ulceration being arrested, will probably depend upon the degree of organization of the part in which it is seated;—being greatest when the part is more organized, and the disease consequently more allied to healthy ulceration; and less when the part is less organized, or the proper white tubercle. This is conjecture; but it is probable that, in Case V., an undefined mass of this kind had been in a state of ulceration; and the same probably occurred in a case mentioned by Laennec, Tom. I. p. 79.

(2.) The other state of tubercular disease is when the tubercles are in circumscribed nodules of small extent, enclosed in distinct sacs, and surrounded by pulmonary substance in a healthy state. In this case, it is probable that the tubercular matter may become softened and suppurated, and may be entirely discharged by expectoration, leaving the sac empty: that the sac may then continue in a state of unhealthy ulceration discharging matter; or that it may pass into a healthy state, presenting the appearance of a firm membranous cyst, with one or more bronchial tubes opening into it,—the symptoms ceasing with the entire discharge of the tubercular matter. Several of these cysts were found by Laennec in the lungs of a woman who had been supposed to be cured of consumption eighteen years before. He mentions another woman, aged 68, who had been for many years liable to cough, with expectora-

tion and uneasiness in breathing; but without much interruption of her general health, until she died, after a few days illness, of acute peripneumony. The lower part of both lungs presented the usual appearances of the fatal attack. In the upper part of the right lung there was a cavity capable of containing a large filbert; many bronchial tubes opened into it, and its inner surface presented the appearance of a smooth membrane of a gray colour, and a semicartilaginous structure. It was surrounded by pulmonary substance in a healthy state. In the upper part of the left lobe, there was a similar cavity, which contained a little serous fluid; and its inner surface presented an intermediate appearance betwixt the smooth cartilaginous structure of the other cyst, and the appearance of a mucous membrane. The pulmonary substance surrounding it was a little indurated. In a man, aged 30, who died of an affection of the brain, without any pulmonary symptoms, but whose previous history was not known, the same writer found, in the upper part of the right lung, a cavity the size of an egg, formed by a firm, smooth, semicartilaginous membrane, and many bronchial tubes opened into it. It was full of coagulated blood. The surrounding substance was crepitating and healthy; but in other parts of the lungs there were small tubercles, in some of which the tubercular matter was becoming friable. In a case in which consumptive symptoms had continued till death, Laennec found a cavity of this kind, the inner surface of which was covered with purulent matter; and in another case he found an appearance as if such a cavity had been nearly obliterated, by adhesion of its sides. There was externally a depression or falling in of the substance of the lung, as if occasioned by a cavity beneath; but on cutting down, there was found an induration, and in the centre of it, a white semicartilaginous membrane, about half a line in thickness, which was continued horizontally for a certain space, and then divided into two layers, leaving betwixt them a small cavity full of yellow friable tubercular matter. There was tubercular disease under this part, and throughout the lung, in various places. This man died of an affection of the brain, after being for some time affected with cough which had excited no attention, and his previous history is not mentioned. In another old man he found, on the surface of the left lung, a depression as if the part were drawn inwards and corrugated. Beneath this, there was an appearance of ossification; and from this point there proceeded a band of white condensed cellular substance, an inch long, six lines broad, and three or four lines in thickness. Several bronchial tubes terminated at this place, and seemed to be obliterated. The part altogether was very white, and presented a remarkable contrast to the dark pulmonary substance which surrounded it. The same writer

mentions a man aged 62, who had habitual cough for many years, but was otherwise in good health, till he died, after five days illness, of peripneumonia. In the superior part of the right lung, there was a fibro-cartilaginous mass of a conical shape, and the size of a walnut, which, when cut into, presented every appearance of a cicatrix. Many bronchial tubes passed towards it and became obliterated; one, of very considerable size, was traced half an inch into its substance, and presented the appearance of a solid cord. In the upper part of the left lung, there was a small cavity like those described in the former cases. It was lined by a smooth membrane, and contained some tubercular matter in a soft state. The surrounding substance was crepitating and healthy; other parts of the lungs were hepatised and inflamed.

Sect. VII.—*Of the Hepatised Induration, and its consequences.*

The preceding remarks refer chiefly to the proper tubercular disease of the lungs. Some of them may be considered as in a great measure conjectural, and much observation is certainly required to enable us to arrive at any certain conclusions. But, in the present state of our knowledge, there is reason to believe, that the induration of the substance of the lungs, which lays the foundation for consumption, varies considerably in its characters in different cases, and in some of them consists of a mixture of various structures, differing considerably in their nature, and in the morbid changes which they undergo, and thus giving rise to considerable varieties in the characters of the disease. In the minute investigation of these varieties, little has hitherto been done; but I think we are fully warranted in establishing a distinction betwixt the two structures which seem to form the extremes—the white tubercle, and the simple hepatisation.

The hepatised induration seems in some cases to be the result of active inflammation, in others to be formed silently and insidiously without any active symptoms. It probably arises from a gradual deposition of animal matter, which fills up entirely the cellular structure of the lung, and then, becoming organized, presents a solid mass, resembling the structure of the liver. It varies in density in different cases, and in different parts of the lung in the same case, and is also diversified by having in many cases tubercles imbedded in it.

A mass of this kind, if it be of limited extent, may continue long, perhaps through life, without passing into any farther state of disease, and without producing much uneasiness; and such masses accordingly are met with on dissection, in the lungs, of persons who have died of other diseases. If it be of greater extent, so as to impede in any considerable degree the circula-

tion through the lungs, it may give rise to dyspnœa, and may prove a cause of hydrothorax. But besides these effects of it, it is liable to pass into ulceration of a peculiarly unhealthy kind, constituting a case of a most dangerous and untractable nature, but differing remarkably from the ordinary tubercular consumption.

The indurated mass, in these cases, appears to differ from the tubercular induration, in being more organized, and consequently more susceptible of inflammatory action—in the inflammatory action being more of an acute kind, and running more rapidly into ulceration. It differs from pulmonary substance in a healthy state—in being affected by inflammatory action from slighter causes—in being more liable, when inflamed, to run into ulceration—and in the ulceration being of a peculiarly unhealthy kind. It usually presents the appearance of an irregular cavity, lined by loose ragged ulceration of the indurated substance itself, as if a piece had been forcibly torn out, while the abscess of the healthy substance is lined by a smooth uniform coating of coagulable lymph.

The inflammatory action, in these cases, may be more or less acute, and more or less extensive. The symptoms, therefore, may vary, both according to the activity and the extent of it, and according to the extent of the indurated mass in which it is seated; in some resembling an ordinary attack of pneumonia, in others being at first slight and obscure, more resembling the commencement of phthisis. In both cases, they usually advance rapidly; in the former, assuming the appearance of pneumonia of a peculiarly untractable character; in the other, constituting a modification of phthisis of a peculiarly rapid kind, remarkably different from the ordinary tubercular phthisis.

The morbid condition of the lungs, to which I refer in these observations, forms a subject of very great interest in the pathology of consumptive diseases. The following cases appear to illustrate some of the principal modifications of it; but much observation is required before we can arrive at any satisfactory conclusions.

Case VI.—A gentleman, aged 39, who had long been liable to cough and difficult breathing, was seized, in October, 1814, with the ordinary symptoms of pneumonia. He was bled three times; and the other usual means were employed, by which he was very much relieved. But, after the urgency of the attack was subdued, he continued to have considerable cough, and the expectoration became purulent; he had then dyspnœa and hectic fever, and died within three weeks of the pneumonic attack. *Dissection.*—Both lungs were extensively hepatised, and in many places beset with tubercles; but none of these were in a state of suppuration. In the substance of the right lung, there was a large cavity, containing ill-conditioned matter.

The inner surface of the cavity presented an irregular surface of dark-coloured ragged ulceration, as if a piece had been forcibly torn out, without any lining membrane; and the pulmonary substance around was dark coloured, and much indurated.

This case I consider as illustrating the effect of active inflammation on lungs previously indurated. I add the following as a contrast to it; being an example of the abscess from active inflammation in lungs previously sound, at nearly the same period from the attack.

Case VII.—In September, 1814, I saw a woman, aged about 30, who was affected with cough and thick puriform expectoration; her breathing was rather quick, and a little oppressed, but without pain; her voice was tremulous and weak, and her pulse frequent. But she was out of bed, and able to walk about, and that day had walked from a distant part of the town, where she had been a servant, to the house of her father, where I saw her. I learnt that she had had a pneumonic attack about a fortnight before, for which she had been bled with relief, but had continued to be affected with cough, thick expectoration, and some uneasiness in breathing; and the latter symptom had increased considerably for the last two days. On the day on which I saw her, she continued to walk about the house, and even into the houses of some of the neighbours; went to bed apparently somewhat relieved, and died suddenly in the night. *Dissection.*—The left cavity of the pleura contained about lbiij. of a fluid which appeared to be a mixture of pus, with the serous effusion usually found in the pleura. The left lung adhered considerably to the surrounding parts; and in the substance of it there were two large abscesses, both of which had burst into the cavity of the pleura. They were both lined by a layer of coagulable lymph, forming a firm, smooth, uniform lining, of a light yellow colour. The substance of the lungs surrounding the abscesses was considerably loaded with thin mucus, but was quite soft; and when the mucus was pressed out, it appeared quite healthy. There was a small quantity of fluid in the right cavity of the pleura; but the right lung was tolerably healthy. No communication could be traced betwixt the abscesses and the bronchial canals.

In the two following cases, the disease appears in a more obscure form, and assuming in its early period more the appearance of incipient phthisis. It is chiefly on account of this form of the affection, as well as another to be next referred to, that I have introduced the subject in connexion with this Inquiry.

Case VIII.—A gentleman, aged 24, of a consumptive family, and himself tall, thin, and delicate, was first confined from his usual employments about 26th February, 1818, by the symptoms of a common cold; he was hoarse, had slight cough and a loaded tongue, but very little fever. After several days, the hoarseness subsided;

but the cough became rather more severe, and was troublesome in the night time. He had slight uneasiness in his breast, but his pulse was very little affected; and his whole appearance was such as indicated a tendency to phthisis, but no immediate danger. After several days more, his breathing became considerably oppressed, with some pain, but by no means acute, and a feeling of tightness across the præcordia. The pulse was then about 90. A bleeding was now employed, with immediate relief of all these symptoms; and, on the following day, he appeared very much better. This was about the 8th or 9th day of his illness. After another day or two, he was seized with a sudden and remarkable diminution of the secretion of urine, so that for a day or more he passed almost none; and the catheter was employed under the suspicion of retention. Diuretics were then given; and, after a day or two, the secretion became natural. The cough still continued, and was at times severe, especially in the night; and he had considerable expectoration of a viscid matter, semipellucid and yellowish. The pulse was little affected; and there was now no complaint of pain, or uneasiness in breathing. He was next attacked by diarrhœa, which was at first removed by opiates; but returned, and was then removed in a few days by the ordinary astringents. Amid these various turns of the disorder, however, his strength had been sinking rapidly; he had now a pale, feeble, exhausted look; no appetite; the cough continuing as before, and the pulse little affected. Without any other urgent symptoms, he now sunk rapidly and died, exactly a month from his first confinement, and about three weeks from the appearance of the uneasiness in breathing, on account of which the bleeding was employed. *Dissection.*—The right lung was in some parts extensively hepatised, in others, tubercular, but not suppurated. The left was a mass of disease throughout; great part of it hepatised, and in a state of great induration; and much of the internal structure of it soft and broken down, like putrid liver. On the external part there was a large, irregular cavity, which communicated with the cavity of the pleura by a large opening, as if a piece had been torn out. The inner surface of the cavity was of a dark red colour, and extremely irregular, and without any membraneous lining. There was another smaller cavity of a similar kind adjoining to it. In the cavity of the pleura there was some dark, sanious fluid, partly puriform.

Case IX.—A gentleman, aged about twenty, during the winter, 1819–20, had been a good deal confined by an indolent swelling which formed on his left buttock. It began like a phlegmon, but increased to a great size; and no applications that were employed could either make it discuss or suppurate. After continuing long in this state, it at length began to subside, and gradually disappeared. In April, he went to the country, and appeared to be in very good health. About the 1st of May he first began to feel himself unwell; he was feeble, depressed, nervous and tremulous; and his breath failed him in walking up an ascent. On the 7th he was seen by a medical friend, who only remarked a considerable frequency of pulse, which he saw no symptom to account for. I saw him on the 11th, when he

came to Edinburgh. His look was then febrile and anxious; his pulse 130, and rather sharp; his breathing short, and about 32 in a minute; he had some cough, but not severe; no pain in his breast or side; and no uneasiness on a full inspiration; tongue clean; appetite good; pretty good sleep; had walked out a good deal the day before. A bleeding was advised, which he bore well; appeared relieved by it, and the blood was buffy.

12th.—Found him up, and dressed. Breathing much less hurried. Pulse 120, and soft; some cough in the night, but not severe. Appeared tremulous, anxious, and easily agitated; but his tongue was clean, and his appetite tolerable, and he complained of no uneasiness.

13th.—Pulse 116; breathing 24; considerable cough, but no uneasiness in any part of the thorax. Was desired to keep in bed, and the usual remedies were employed.

14th.—Pulse 112; cough rather more severe, especially in the night, with a deep hollow sound; otherwise little change.

15th.—Pulse 120. Some delirium in the night; cough at times severe, at other times free from it for several hours. Expectoration purulent; increasing weakness; no complaint of his breast, or of any pain. Breathing rather more frequent than natural.

16th.—Pulse 130. Much delirium; cough as before.

17th.—Pulse 140. Constant delirium; little cough; great exhaustion. Died in the night.

Dissection.—The right lung was a mass of disease; the whole much indurated; externally inflamed; internally there were several abscesses; particularly one large irregular ulcerated cavity, resembling that described in the preceding case. This was at the upper part; lower down there were several smaller cavities; and at the lower part there was a dense tubercular mass, of light ash colour. At the very lowest part of the lung, there was a very small part, which was in a tolerably healthy state. The left lung appeared much smaller than the right, and was throughout, both externally and internally, of a very dark colour, nearly black—in some places exhibiting dark gangrenous ulceration, and cavities, containing dark sanious fluid—in other places a soft black mass, like putrid muscle. No part of it was in any degree in a healthy state; and there was no appearance of tubercles. The diaphragm on the left side exhibited, on its upper surface, a dark gangrenous appearance. There was considerable effusion in both cavities of the pleura; that in the right cavity was light coloured and puriform, that in the left was dark and sanious. The other viscera were healthy.

The former of these cases is the most distinct example of the disease to which I refer under this head. The second is nearly allied to it, though still more rapid, and in its symptoms still more obscure; the frequency of pulse which was wanting in the former case alone indicating any thing of the nature of acute disease.

There is another modification of the disease in which the progress is much more slow, and yet similar appearances are

met with on dissection. As it cannot be supposed that the symptoms could have gone on in this slow chronic form, with the morbid appearances which we find in these cases, I think it probable that, in the early stage of them, the hepatisation had been going on, commencing probably by a low inflammatory action; and that it had advanced to ulceration only a short time before death, when the symptoms generally become more severe. This was probably the course in the two following cases, which will serve to illustrate this modification of the disease. In the one it was complicated with tubercles, but there was no vestige of tubercles in the other.

Case X.—A gentleman, aged 21, died after an illness of nearly six months, in which the symptoms were extremely obscure. He was first seized after exposure to cold with diarrhœa and vomiting, and he had at this time a peculiar, pale, exhausted look. The symptoms yielded readily to the ordinary remedies; and he then complained only of his stomach; of oppression and indigestion, with variable appetite. Soon after this, he was seized with cough, accompanied by a copious expectoration of viscid matter, tinged with blood. After a short time, however, these symptoms also disappeared, and he complained again only of his stomach. He was feeble and languid, with a sallow, waxen, unhealthy look, a variable appetite, and various uncomfortable feelings about his stomach; but he would not admit that he had any cough deserving attention. When closely questioned upon this point, he said he sometimes coughed a little when his stomach was empty, but not at any other time. His breathing was natural; and there was no uneasiness about the thorax. His pulse, when sitting up, was frequent and small; when in bed, it was natural. In this manner he went on for several months, without any thing more decided in the symptoms; while the progressive decline of his strength, and his whole appearance, indicated serious disease. About a fortnight before his death his cough increased considerably, with some expectoration and slight uneasiness in breathing; and he died gradually exhausted, having been confined to bed only a few days. *Dissection.*—Right lung most extensively indurated. On the anterior part of it there was a large opening, leading into a deep and extensive ulcerated cavity; at the lower part, a considerable portion was healthy. The left lung was almost entirely indurated, with more of the tubercular appearance; numerous small vomicæ and cavities containing a soft curdy matter. The other viscera were healthy.

Case XI.—A girl, aged 18, of a very consumptive family, had suffered in early life repeated pneumonic attacks, but had enjoyed very good health for several years, until January, 1821, when she was affected with considerable cough and catarrhal symptoms. These complaints continued for some time, and then disappeared, leaving her, however, considerably reduced in flesh and strength; but she made no complaint, and was able to attend to her usual employments. In the middle of April she was seen by my friend Dr. Begbie, who

found her considerably reduced, with quick breathing and a small frequent pulse, but without cough or any uneasiness in the breast; appetite good; tongue clean; catamenia suppressed since January; bowels natural. She continued in this state, but becoming gradually weaker and more emaciated, until about the 7th of May, when she began to have a short dry cough. She still complained of no uneasiness in the breast; but her breathing was much hurried by any exertion, and was at all times short and much quicker than natural. From this time, by increasing weakness, she was confined to the house, though never entirely to bed: when in bed, she could only lie on her right side or her back. Hectic symptoms now appeared, with increase of cough, and quick and difficult breathing; and she died in the end of May in a state of extreme emaciation, but without having complained of any pain, and without having had any expectoration. *Dissection.*—The left lung adhered extensively; and, where it was free from adhesion, there was considerable effusion in the cavity of the pleura. The substance of the lung presented one mass of disease, part hepatised and part broken down into a dark-coloured, soft, gangrenous looking matter; and there were several irregular ulcerated cavities, containing bloody, ill-conditioned pus. There was no vestige of tubercles, and the right lung was healthy.

The form of disease which these cases are intended to illustrate presents an affection remarkably different from the ordinary tubercular consumption. It may be complicated with tubercles, and it may occur without any vestige of them: and its progress, as appears from the cases, admits of remarkable varieties. In a practical view, it presents a subject of much interest, as it is probable that the more acute forms of it would admit of active treatment in their early stages, with more prospect of success than we can hope for in any period of tubercular consumption.

Sect. VIII.—*Practical Conclusions.*

The slight and imperfect outline of this important subject, which I have attempted in this and a former paper, leads to some conclusions of considerable importance in regard to the prognosis and treatment of consumptive diseases. On these points we still find a remarkable diversity of opinion,—some considering consumption as in all cases a hopeless disease, while others have with confidence detailed cases that have terminated favourably even in the more advanced stages. In some of these fortunate examples, the recoveries have been ascribed to tonics, nourishing diet, and exercise; in others, to bleeding, spare diet, and other remedies of an antiphlogistic nature; and, by men of observation and talent, these opposite methods have been recommended with equal confidence, as successful modes of treating consumption. On these contradictory statements, some

light may probably be thrown by attention to the various forms of disease, of which I have attempted an outline in the former part of this Inquiry, and which assume in a great degree the characters of consumption. They vary exceedingly in their nature, and in the degree of danger which accompanies them,—and they certainly require varied and even opposite modes of treatment. This part of the subject I must allude to very briefly.

I. In the affection which, for the sake of a name, I have called *Sympathetic Cough*, the prognosis is generally favourable; though, in many cases, the appearances are such as to excite considerable alarm. The treatment must vary according to the cause: In the most common form of it, the tonic treatment is required, with exercise, nourishing diet, and minute attention to the bowels.

II. *The Cough from Irritation of the Diaphragm*, is perhaps most commonly connected with organic disease in the abdomen: and the prognosis consequently will be unfavourable. When the cause is more of an active kind, there is more chance of recovery, as in that which is connected with certain acute affections of the liver.

III. In the *Laryngæal Phthisis*, the prognosis will depend very much on the period of the disease. If, by minute attention, the nature of the case be detected at a very early period, and the necessary practice adopted with decision and promptitude, I believe its progress may be arrested in a great proportion of instances. If this period be allowed to go by, the disease is generally hopeless. The remedies in the first stage, are blood-letting, particularly large and repeated topical bleeding, blistering, issues, spare diet, perfect rest, and regulated temperature. In the advanced stages, it admits only of palliative treatment.

IV. *The Disease of the Bronchial Membrane* may terminate favourably in all its stages, even in the more advanced, when the patient is much reduced, and has very much the appearance of an advanced period of consumption. The remedies in the early stage are blood-letting, particularly large topical bleeding, blistering, antimonials, with opiates, digitalis, spare diet, rest, and regulated temperature; in the more advanced stages, tonics, stimulants, the balsams, nourishing diet, exercise in the open air, and change of climate.

V. *The Chronic Inflammation of the Pleura* may often be arrested at its commencement; in its advanced stages, it is generally hopeless. Much attention is required for detecting its existence; as, from the pulse being in many cases little affected, there is great danger of the pain being considered as muscular,

and the period being allowed to go by, when it may be treated with success. The remedies are blood-letting, particularly topical bleeding, blistering, issues, spare diet, confinement, and perfect rest.

VI. *The Disease of the Posterior Mediastinum and Bronchial Glands* is generally hopeless. It is, in most cases, combined with tubercular disease of the lungs.

VII. *The Abscess from Active Inflammation* may be suddenly fatal by suffocation; or it may be spit up in immense quantities, and the strength of the patient may sink gradually under the discharge, with all the symptoms of consumption. But it may also terminate favourably, even after a large quantity of purulent matter has been expectorated; the abscess healing gradually, if the lungs are otherwise healthy, as a healthy abscess does in any other part of the body. The treatment in this case must be upon the tonic plan.

VIII. *Hæmoptysis* may be an acute disease of lungs otherwise healthy, or it may arise from the bronchial membrane; and, in either case, with reasonable attention, the danger is not great. If it arise from lungs previously diseased, it is likely to be followed by consumption; or it may be suddenly fatal by suffocation.

IX. In regard to the *True Consumption*, the facts which have been stated seem to lead to principles of considerable importance. Consumption may be considered as the ulceration of indurated lungs; but in the mass composing this ulceration, there is a variety of structures, differing remarkably from each other in their characters, and probably differing materially in the morbid changes which they undergo. The white tubercle and the hepatised induration seem to form the two extremes; the fleshy tubercle, and the melanosis probably hold intermediate places. The white tubercle appears to pass slowly and insidiously into ulceration without active symptoms, while the hepatised induration is often the seat of considerable inflammatory action. Now, the mass of indurated lung, when we find an opportunity of examining it at an early period, before it has been much destroyed by ulceration, generally appears to be composed of a mixture of these structures, and the proportions of them appear to vary in different cases;—some consisting chiefly of the tubercular disease, with very little of the hepatisation; others of the hepatisation, with tubercles imbedded in it in various proportions; while some consist of the hepatised induration, without any appearance of tubercles. Hence probably arises a source of great variety in the character of the morbid actions, some being more, others less acute; and of corresponding variety in the treatment, which may be adopted in the early stages; some cases being the subjects of antiphlogistic treat-

ment, with considerable prospect of being able to arrest their progress; others advancing slowly and insidiously, without any mode of treatment being of the slightest avail. Other important varieties arise from complication with some of the other affections formerly alluded to; the disease in some cases commencing in the pleura or the bronchial membrane, and afterwards advancing to the lungs; or it may commence in the form of active inflammation in a part of the lungs which is healthy, and, extending to a part which is indurated, may excite there the unhealthy ulceration, which might perhaps have been prevented had the affection been checked at first in the active stage. From these sources of variety will appear the difficulty of laying down any precise rules for the treatment of consumptive diseases, and, still more, the impossibility of proposing any one mode of treatment which is to be applicable to all the forms of consumption. There is, perhaps, no class of diseases which admits of greater variety, or in which our success must depend more intimately on minute attention to the characters of individual cases in their early stages. It is only by a careful investigation of these varieties, that we can ever expect to add any thing to our knowledge of consumption, and not by the vague and flimsy speculations by which the public mind is by turns amused and distracted. Consumption, says one, is a disease of debility—says another, it is a disease of excitement. The sound pathologist knows that it is a morbid degeneration of a vital organ; and that except he can combat it there, in its proper seat, the excitement and the debility are equally beyond his control. In this morbid condition there are many varieties, and many of them are obviously beyond the reach of any human aid. There are others in which the tonic treatment is proper and expedient, and in which supporting the strength of the patient by every possible means, is giving him the only little chance that remains to him of throwing off the disease. But in others, certainly the antiphlogistic treatment is required; and, by the judicious employment of it at the proper period, some considerable prospect is held out to us of arresting the disease at its first appearance. If these be trifled with, or injudiciously treated at the commencement, the period for active practice is soon gone by, and the error is fatal.

Researches on a Disease, hitherto little known, which has received the Name of Softening of the Brain. By L. Rostan, M.D.

(From the London Medical Repository for January, 1821.)

Every medical Practitioner owes to the science which he cultivates the tribute of his observations. In submitting those

which I am now about to present to the judgment of my contemporaries, I have taken every possible precaution to preserve my mind from the influence of preconceived opinions. In order to avoid imparting to my inquiries any tincture of my own peculiar views, I have, instead of recording the cases myself, confided them to students of known talent and information; willing rather to sacrifice some useful shades in the portrait which I am about to trace, than incur the injurious suspicion of having perverted truth. My respect, indeed, for it, has been such, that I have merely confined myself to the correction of some negligences of style in the record of the cases. These facts I offer to the reader, as guarantees of the accuracy which I have introduced into my inquiries.

By some persons I may, perhaps, be reproached for not having quoted more largely from authors. My reply is, that I propose to give my own observations—not those of other men. The pleasures of compilation may devolve on those who are so unfortunate as to have nothing of their own to offer: and from the bibliographical researches which I have already made, I have learned nothing satisfactory, except that this disease is a modern discovery; of which several persons appear to have caught a glimpse nearly at the same time, although no one has yet written professedly on it.*

It is now about nine years since a patient exhibiting all the symptoms of an apoplectic seizure, was carried to the infirmary of la Salpêtrière. The physician whose visits I then followed as a student, pronounced it to be a case of sanguineous extravasation; and my acquired confidence in his diagnosis did not allow me to question its accuracy in this instance. But what was my surprise, when, instead of extravasation, I found only considerable softening of a portion of the cerebral substance! This morbid change, which I had never before observed, struck me so much, that my attention was directed almost exclusively to it. I spoke of it to several experienced physicians, some of whom objected that such an alteration could not have suddenly taken place. Some, again, asserted that it was a nervous or serous apoplexy; and others, that what I had observed was merely an effect of temperature, or of the violence inflicted in breaking up the cranium. Certain, however, of having met with a morbid alteration, I remained unshaken by these objections; and resolved to pursue my inquiries with increased attention. Fresh opportunities ere long

* Justice requires me to observe, that there exist some dissertations in which this disease has been spoken of. Morgagni has cited a few instances of it; Rochoux, in his valuable Monograph on Apoplexy, has treated on cerebral softening; and by Dr. Abercrombie, in his Memoir on Chronic Inflammation of the Brain, by Bricheteau, and Moulin, it has been indirectly noticed.

presented themselves; and I found the same morbid changes in numerous subjects, connected with the same symptoms. The most striking example of this kind was one which shortly after presented itself at la Salpêtrière, during Dr. Landré-Beauvais' excellent course of clinical lectures. An aged woman was brought in, stricken with sudden insensibility, and completely hemiplegic. The degree of coma, intelligence, sensibility, and contractility, were carefully noted; and, on dissection, one whole hemisphere of the brain was found softened, and of a rose colour. One hundred students had seen the patient, and more than fifty witnessed the dissection. This case was not lost on me. Like every one else, I had been struck with the signs of apoplexy; but I had, moreover, remarked a symptom to which no attention had been paid. On asking the patient where she felt pain, she made no reply, but directed, slowly and with difficulty, to the head, the hand which continued moveable; she even endeavoured to give it this direction mechanically, without being solicited. I knew not, at that time, the value of the sign; but its importance will presently be seen. It is a singular remark and deserving of note, that when the physician for the first time observes a patient of this kind, he is struck with and regards only the apoplectic symptoms; so that if, after death, an inquiry be made, whether there existed any shades capable of distinguishing the two lesions, he will not reply that he did not observe them, but that they did not exist. In some instances, I have distinguished this morbid alteration in the living subject, apprized certain persons of it, and concealed from the student charged with recording the case its diagnosis, and the latter has seen only apoplexy, and accurately described it. I might even cite all the cases of which I myself have kept a record to a certain period; they are all entitled *apoplexies*, and the symptoms which are traced indicate nothing else. Persons, on the contrary, who are apprized of the diagnosis, distinguish the march of the disease, and more correctly delineate it; after a certain time, they become capable of distinguishing it themselves. The students who follow my visits are now tolerably expert in this way. It is then necessary to be able to distinguish, during life, two organic alterations so very different. Here there are great difficulties to be surmounted. It may be asserted, that destruction of the same part must give rise to the same change in the function over which this part presides; and by this reflection I have been frequently discouraged in my researches: but persuaded, at last, that from different causes different effects must result, I persevered in the inquiry, and am now able to distinguish this lesion with nearly as much probability as other organic alterations. It is rather on the progress and fu-

gitive shades, than on pathognomic signs, that this diagnosis is founded. The communication now published is designed to spare the reader the labour which I have incurred in reaching the point where I am now arrived—an object the more important, as all practitioners are not placed in a situation equally favourable to such researches.

Chapter First.—*Description of the Disease in its simple and regular State.*

This disease affects the encephalon, and is constantly characterized by softening of a part of its substance, and frequently by a change of its natural colour. Hence it would appear easy to find an expressive and harmonious word whereby to designate this alteration; but I have in vain referred to Greek lexicons with this view, and shall abandon to others the honour of the enterprise. I do not, like Dr. Abercrombie, give to this morbid change the name of *chronic inflammation of the brain;* because the disease is by no means invariably chronic, and I am not even convinced that there is always inflammation. For this last reason I have rejected the term *encephalitis*, which in *some* cases it seems to merit. I have, therefore, determined to leave this disease the same periphrasis by which it is already known, and which designates its principal phenomenon. All diseases should, in fact, be named from the kind of alteration which they induce in the organs; till then, the language of medicine is doomed to confusion. I shall, therefore, call the disease in question *softening of the brain.*

Symptoms of the Disease.—Two very decided periods may be distinguished in cerebral softening. The *first* offers only those vague and scarcely observed phenomena which are common to many affections, in themselves of little value, but, acquire great importance, and strongly characterize the disease when manifested by the symptoms of the second stage: they are even of such consequence, that when they do not exist, or are unobserved, the diagnosis becomes excessively obscure. One or two of these phenomena only often appear; and they commonly suffice to indicate the species of cerebral lesion, when the symptoms of the second period commence. The following are the precursory phenomena:—The patient has sometimes a fixed, obstinate, intolerable pain in the head, which usually resists every remedy, and continues several days, or even months: this pain does not invariably occur, but when existing, may lead to the apprehension of cerebral softening. Vertigo renders the progression of the patient vacillating; the faculties of intelligence become more obtuse, the perceptions slow, the judgment difficult, memory weak and faithless, ima-

gination extinct, and ideas confused. The replies, however, are correct, but after long reflection, and slowly delivered; elocution may be embarrassed. At other times, the patient expresses himself with brevity; his temper changes; he becomes dejected, silent, querulous, sometimes indifferent; he is frequently drowsy; and, although not irrational, his intellect is evidently no longer natural; those around commonly consider him as slightly deranged. With these symptoms, are observed tingling and numbness in one of the extremities, commonly about the fingers; difficulty of seizing objects, or stiffness, amounting frequently to contraction. The sensibility of the limb is not always proportionately diminished, but sometimes increased so as to render the slightest touch productive of pain: these pains, as invariably unattended with redness, heat, and tumefaction, cannot be confounded with rheumatism. The intellectual faculties are not always impaired; they may even be perverted and augmented. Delirium sometimes occurs, and extreme agitation, with pyrexia. In fine, insanity and senile dementia frequently precede softening of the brain, as observed by myself, and shown in the cases of Georget.*

I have rarely seen intolerance of light and strabismus preceding this lesion; but diminished or perverted vision, and even complete blindness, are frequently precursory phenomena. Tinnitus aurium often exists, and the least noise is intolerable; but more commonly the hearing is impaired. The smell and taste seldom offer any very sensible alterations: and in this stage, most of the phenomena just described are so slight, that the patient does not solicit advice for, or even mention them. Their existence is sometimes only ascertained when, in the second stage, the patient continues sufficiently rational to give an account of his preceding state. Again, as I have already said, and shall hereafter prove, all the symptoms do not occur at once in the same individual. Some may object, that all the phenomena just enumerated are also the precursory phenomena of apoplexy. The distinction which may be established, and appreciation of each of these symptoms, will be seen in the article on diagnosis.

Such are the alterations which I have observed in the organs of sense, intelligence, contractility, and animal sensibility, during the first stage. I have been anxious to fix the attention of the reader upon them, because of their high importance in diagnosis. Unfortunately, on being called to an individual suffering from this disease, he is very rarely in a state to give the requisite information; and the attendants are obviously incapable of supplying the defect.

* De la Folie, page 490.

The organic functions, during this stage, are frequently deranged. The appetite is impaired; thirst urgent; digestion bad; mouth clammy; and tongue white. There is nausea, and even vomiting of green bilious matter: the epigastrium and whole abdomen are tender: diarrhœa sometimes occurs; but constipation, or rather torpor of the rectum, is more frequent. *Defecation* is rather involuntary; but, in most cases, there is inability of retention, and scantiness of the urine. Respiration is seldom disordered; yet the patient sometimes complains of its tightness, and it is oftener retarded than hurried. The pulse is very variable, seldom accelerated; in some cases developed, in others slower than natural. The symptoms, which the other functions, absorption, exhalation, the secretions and excretions, and nutrition, may exhibit, afford nothing constant or remarkable. Some violent phlegmasia, thoracic or abdominal, occasionally precede the cerebral disease. I have sometimes seen it ushered in by general inflammatory diathesis. All the viscera were inflamed; the lungs hepatised; the pleuræ covered with false membrane; and the intestinal canal inflamed throughout. Such instances are rare. It is more common to see the symptoms of the second stage occur in a subject who has been attacked with severe enteritis or peripneumony. I shall record a case of this latter description; but I have witnessed a case of the former sufficiently singular in its circumstances to merit a summary statement. The phenomena presented by the organs or functions of individual life are, after all, much less important and worthy of attention than those of the animal life. (See the Cases.)

Second Stage.—After having presented some of the signs just delineated, the patient loses, suddenly or gradually, the use of one limb, sometimes half the body. If in the erect posture, he falls; and if recumbent, sometimes tumbles from his bed. Generally, consciousness and intellect are preserved; but infinite difficulty is experienced in answering questions, and his conceptions are only expressed by automatic movements. In some cases, but not commonly, there is perfect coma. When this occurs suddenly with paralysis, consciousness is usually restored the day after; and the inexperienced physician fails not to applaud his treatment. But the illusion is soon dissipated: the symptoms recur in an aggravated form; the intellect and senses are utterly abolished; perfect coma succeeds; the limbs become motionless; and the patient dies commonly on the fourth or fifth day, presenting, in most cases, *the symptoms of low fever.*

During the course of the disease, the state of the limbs is not the same in all cases. The most frequent is, doubtless, that of impaired or destroyed contractility; and the limb is paralyzed.

Numbness, weight, prickling, and intolerable shooting pains, aggravated by touch, are often felt in the affected member. Extreme stiffness and contraction of the diseased side are also at times observed. The forearm is bent on the arm, the hand on the former; and much difficulty is encountered in restoring the limb, even momentarily, to its natural state. A convulsive condition of the extremities is much more rare. In some few cases there are general or partial convulsions.

The face may be pale or much flushed, according to circumstances, which will be mentioned. The headach, previously existing, grows more violent, or comes on, if it have not been felt before. On inquiring which is the painful part, the patient, after the first, but frequently after the second or third question, directs the moveable hand to the head, and, what is remarkable, almost always precisely to the seat of the disease, and the side opposite to the paralysis. Delirium, when supervening, continues after the manifestation of the paralysis; but is then more silent.

Yet delirium is not a common symptom. In most cases, there exist stupor, impaired intelligence, and coma. If the encephalon be in this state, the senses are commonly implicated, become less sensible to their natural excitants, and towards the last cease altogether. The eye still sometimes continues sensible to light; the pupils contract on approach of a candle; and one of them may be more dilated than the other. The eyes are commonly fixed, motionless, and turned upward; and the head usually bent back. The hearing becomes dull, never more acute, in this second stage. The sensibility of taste and smell is almost invariably decreased. The mouth is rarely contorted at this period, but afterwards becomes so. The touch probably undergoes similar alterations; but it is difficult to ascertain this positively. The patient has frequently carphologia, and attempts to draw together the bedclothes.

The thirst is commonly increased; appetite lost; lips and teeth dry; tongue rugous, chapt; at first red, and afterwards brownish or blackish. Deglutition is often difficult, almost impracticable; the efforts at the act sometimes convulsive. In some cases, copious vomiting, first of food, subsequently of bile; frequently great abdominal tenderness; sometimes involuntary discharge of fæces, more frequently constipation; unconscious escape of urine; respiration often tight. The pulse is, in some instances, accelerated and stronger than ordinary.

Progress of the Disease.—The condition just described may remain stationary, at least in appearance, for awhile; after which the disease proceeds rapidly to death—the ordinary issue. At other times the progress is evident from the first, and goes on gradually increasing. The signs of coma and paralysis rarely diminish at an advanced period of the affection;

I have seen it but once: hence the case may be ranked among those whose march is anomalous. The fatal symptoms fail not to recur. The progress of the disease is then essentially continuous. There nevertheless occur evening paroxysms in cases where the patient presents other symptoms of phlegmasia. The face then reddens, the heat augments, and the pulse is developed: the patient almost constantly reclines on the back, or the paralysed side, during the whole time. The scene commonly terminates with all the phenomena of low fever. Nature, which respects not our artificial divisions, exhibits in this disease not only an acute and chronic character, but almost every intermediate shade. One may distinguish its acute progress, and predict a more prompt termination, when the symptoms proceed with violence and rapidity. If they be slow, the fatal period will be more remote.

Such are the phenomena which the disease presents in its simple and regular state. The reader will have already been struck with its peculiar physiognomy. I have omitted some unimportant and useless details. In order to render more striking what has just been said, I shall cite some cases exhibiting the disease in its utmost simplicity. In the article on diagnosis, I shall appreciate, not only the value of each of the principal symptoms, but show, as clearly as possible, wherein the disease of which I am now tracing the history, differs from other cerebral affections most strongly resembling it, and with which it may be confounded.

Cases of Softening of the Brain, the Symptoms of which have proceeded in a regular and simple Manner.

First Case.—A widow, aged seventy, of dry constitution, had for a year experienced numbness of the lower limbs, arising without evident cause, and increasing so as to impede the functions of the extremities. The legs were, in fact, dragged in progression, particularly the left, in which also the numbness was most felt. The sensibility of neither was impaired, nor was any difference in their form perceptible. The cause of this affection seemed to have acted on the patient's mental faculties, so that she passed for having her intellect slightly deranged; yet she heard, and replied directly to questions; but rarely took part in conversation. The organ of intellect seemed no longer to be in a condition to pause long on the same object.—July, 1819. The woman experienced weight of the head, with transient vertigo. 15th. She fell from bed, and the skull received the principal shock; but she was insensible neither before, during, nor after the accident. The headach, subsequently increased, was complicated with symptoms of gastric disorder.

August 1st.—She was admitted into the infirmary; and pre-

sented general debility, headach, loss of appetite, dry mouth, red and dry tongue, constipation, warm humid skin, and frequent pulse. Abdomen soft; respiration free; no cough. Some hours afterwards, a paroxysm with delirium so violent as to necessitate the employment of restraint. She did not speak; but agitated her arms, and tried to get out of bed. The delirium continued several hours, and recurred the three following days nearly at the same time, but was of shorter duration. 5th. No delirium; the agitation succeeded by a calm, or rather a remarkable insensibility. Reclination on the back; body nearly motionless; head thrown back; face slightly inclined to the right; eyes half open, and turned upwards; teeth set, and lips open; limbs extended: this position continued till death. She spoke only when questioned repeatedly, and with a loud voice: her replies were difficultly uttered and imperfect. 6th and 7th. Same state. Features decidedly altered. Constipation not relieved by injections. Epigastrium painful. 8th. Patient invariably answered in the affirmative, when asked if her head was painful. I requested her to point with her hand to the part; but it was not till after three or four times loud repetition, that, without any change of posture, or other reply, she slowly drew from the bed her right arm, directed her hand to the vertex, withdrew it over her forehead, and let it fall back. Attempts to extort a fresh reply were useless. The organ of intelligence seemed to have relapsed into the state of torpor from which it had been momentarily roused. 10th. Teeth sooty, set; lips blackish, always open; tongue red and dry; pulse accelerated, intermittent; constipation obstinate. 11th, 12th. Face shrunk. Death on the 15th.

Dissection, twenty-four hours after Death.—External:—Body emaciated. Head: Cranium fragile. Bloody points on surface of the dura-mater, consequent on rupture of vessels in detaching the calvaria. The arachnoid might be readily and clearly detached from all parts of the brain, except the internal, middle, and superior portion of the right lobe. This was the seat of an alteration the more interesting, as it had been predicted. The cortical was confounded with the medullary substance, and both so softened as to present the aspect of a greyish jelly. The convolutions, every where else very strongly marked, were here effaced to an extent of three inches and a half in circumference. This morbid change was not exactly circumscribed; it extended more anteriorly than backward, and occupied nearly the whole portion of brain which serves as a roof to the lateral ventricle; this, as well as the opposite cavity, contained a little serum. The right corpus striatum exhibited a rose colour; but no other sensible difference from the other was observed. The right optic thalamus was also slightly

softened. The morbid change of the right hemisphere could not be regarded as the result of old extravasation; for, 1st, it was not circumscribed, and presented not the peculiar yellowish colour which indicates extravasation; and, 2dly, it was not enclosed in a membrane, which forms another distinctive character of this alteration. The whole of the left lobe of the brain and the cerebellum were sound. The medulla oblongata was sensibly depressed from before backward, in consequence of the unusual projection formed by the processus dentatus in the foramen basilare. Thorax: Traces of old pleurisy of the right side; two purulent cysts, communicating together in the summit of the superior right lobe. Left lung sound. Parietes of the left ventricle of the heart thickened, and cavity consequently contracted. Origin of the aorta ossified. Abdomen: Gastric mucous membrane much loaded.

Second Case.—A woman, aged 70, had for several years taken refuge in la Salpêtrière, in consequence of blindness. Her health had been usually good. In July last, she began to complain of weight and some inexpressible sensation in the head, and intimated a dread of apoplexy. No further information of her preceding state could be obtained. July 21st, she was admitted into the infirmary, with violent headach; but its seat was not precisely indicated. The eyes were closed; the state of the pupils could not obviously be consulted. Features altered; mouth open; coma; left side motionless; sense of great weight in the corresponding arm; respiration sonorous; all questions unanswered. Fifteen leeches to the neck; purgative injections; stimulant pediluvia. 22d. Same state: the sound arm directed sometimes to the head, sometimes to the cardiac region, where the pulsations were unusually strong; oppression; frequent high pulse. Venesection; blister to the nucha. 24th. Reclination on the back; profound coma; mouth open, without being drawn awry; features lengthened; left side insensible; patient making constant efforts with her hand in every direction, as though to seize some object on the coverlet; can hear; shows her tongue when asked; and points to the right side of the head, as the seat of pain, as also constantly to the epigastrium. Skin cold; respiration short and hurried; tongue contracted, red, thick, cracked, dry; urine at first retained, afterwards almost continually escaping. Sinapisms to the feet. 25th. Worse; general insensibility. 26th. Prostration; facies Hippocratica; burning skin; strong frequent pulse; moaning and hurried respiration. Died in the night.

Dissection.—Heart flaccid; its cavities, particularly the right, remarkably large; aortic valves slightly ossified. Stomach containing a yellow bile-like fluid; its mucous membrane here and

there brown. Small intestine in several points greatly contracted, and filled, as was also the cœcum, with deep yellow viscid mucus. The membranes of the brain were sound. The circumference of the organ presented a kind of tumefaction, probably dependent on the warmth of the atmosphere. Left hemisphere healthy. On incision of the grey substance of the posterior lobe of the right, the whole was found reduced to a soft and almost fluid pulp. The white substance, as far as the level of the ventricle, shared the alteration. The posterior part of the anterior lobe was also visibly softened; and it was only at the centre that the cerebral structure resumed its natural aspect. Cerebellum unchanged. Optic nerves flattened, wasted, reddish, and presenting the aspect rather of a small arterial tube than of a white chord, as in the natural state.

Third Case.—A widow, aged seventy-eight, was admitted into the infirmary, September 25th, 1819. For five days she had complained of vertigo and incipient paralysis, which, however, did not prevent walking. Soon afterwards the left side was paralysed; and the patient gradually sunk into the state which she presented Jan. 28th, 1820. Reclination on the back; complete paralysis of the left side; face drawn to the right; tongue's point inclined to the left. Vision good; pupils little contracted, the right more than the left. Hearing clear; sensibility of the paralysed side somewhat impaired, though not extinct. Tingling and pain in the paralysed limbs: never has experienced headach. Intellectual functions unaffected; answers correctly every question. All the other functions natural, except that the contents of the rectum and bladder are unconsciously discharged. A few days after, a slough formed on the integuments of the sacrum, and spread rapidly. Feb. 8th. Final struggle commencing; pulse tumultuous, nearly imperceptible; hurried respiration; carphologia; subsultus tendinum; delirium. Death on the 10th.

Dissection.—Feb. 13th, 1820. On removing the cranial integuments, was found, opposite the superior angle of the occipital bone and a little lower, a mass of yellowish dense cellular substance, creaking beneath the scalpel. Close adhesion of the membranes of the brain to the bones, particularly in the course of the sutures, and opposite the superior angle of the occipital bone. Some limpid serum in the basis cranii; and sudden depression of the posterior lobe of the left cerebral hemisphere. The whole lobe, including the posterior horn of the left lateral ventricle, converted into a sort of pulp, without a vestige of organization. Both ventricles were sound; but in the substance of the right hemisphere, several traces of old extravasations, distinguished by a formation of the adherent yellow membrane.

Amid these, a slight softening in the centre of the medullary substance, and extending to the roof of the ventricle. An old vestige of extravasation in the superior part of the tuber annulare. Other organs not examined.

Fourth Case.—A woman, aged seventy-three, well formed, of sanguine temperament, married and a mother, was admitted into the infirmary Jan. 19th, 1820, senseless and almost without motion. From the report of her attendants, she had been attacked, about eighteen months before, with apoplexy, succeeded by complete hemiplegia of the left side; and the use of her left limbs had been subsequently, but imperfectly, restored. About the 18th of the present month she had become suddenly insensible, with loss of motion; and now presented the following condition: She appeared strange to every thing around; yet, when questioned respecting her pain, she tried to raise her hand to the head, and to show her tongue, when requested. Decubitus on her back; left limbs perfectly immoveable, but sensible on being pinched. Head thrown back; face flushed; eyes tearful, half closed; lips open and shut alternately; tongue thickly furred, blackish grey, particularly at the base, dry and cracked; mouth clammy; incessant thirst; deglutition difficult, and accompanied with suffocative cough, consequent on admission of liquid into the trachea. Abdomen painful on pressure, tense, and hard; constipation; urine abundant. Respiration sonorous, sometimes executed with puffing of the cheeks and elevation of the whole thorax. Pulse strong and frequent. Skin hot, and sometimes bathed in sweat. Prescription: Diluents; blister to the nucha; purgative injections. Symptoms for awhile relieved; subsequently aggravated. Death on the 28th.

Dissection.—Cranium: Remarkable softening of the posterior and part of the middle lobe of the right cerebral hemisphere, extending nearly from the great fissure to the circumference, and from summit to base. Near the centre of the anterior, at its union with the middle lobe, traces of an old and extensive extravasation with its membrane. A little serum in the lateral ventricles. Cerebellum less firm to the right than the left. Marks of an old extravasation in the left crus cerebelli, near its insertion into the pons varolii. Thorax: Heart large, and adherent to the pericardium at its apex. Abdomen: Gastrocolic (large) omentum and mesentery, containing much greyish white fat. Stomach contracted, and, like the intestines, perfectly free from inflammation. Ovaries in complete atrophy.

Fifth Case.—A woman named Godet had attained her eightieth year, without serious disease. She had menstruated at eighteen, married at twenty-one, and borne four children.

At forty-four the menses gradually ceased, without disorder. After admission into the hospital, she complained only of asthma, an affection so common to advanced age. She had never suffered headach, and retained free use of her limbs; yet for some months she had used the left arm in preference to the right. June 29th, after a good night, she fell from her bed while dressing; and, when taken to the infirmary, exhibited the following symptoms: Intellect clouded, but not so much as to prevent reply to some questions. She remembered distinctly the circumstance of her fall, which was caused by giddiness, never before experienced. In order to obtain an answer, it was necessary to fix her attention by speaking aloud. She did not always finish her sentences. She could collect only a few ideas; and if urged to speak long, the incoherence of her replies was obvious. The right arm was motionless; face red; pulse full and frequent; surface warm, but moist; tongue red, and a little moist at the apex and borders, furred, whitish at the base; bowels constipated. Prescription: twelve leeches to the neck; dose of sulphate of soda; purgative injections; abstinence. July 1st. Apparently better. Attention more readily fixed, and answers more connected. Arm somewhat less difficultly moveable; face always flushed; pulse full and frequent. Other functions regular. Venesection; sulphate of soda. 2d. Same: two stools. 3d. Tongue black and dry; circulation conspicuously deranged; pulse either slow and irregular, or hurried and intermittent; ideas clouded; diarrhœa. 4th. Features sunk; ideas incoherent; pulse as yesterday; abdomen painful on pressure. 5th. Symptoms aggravated. Death on the 6th.

Dissection.—Emaciated. Cranium: bones natural. Bloody points on the surface of the dura-mater. Convolutions of brain strongly marked; little serum in the ventricles. Both corpora striata softened, and yellowish areolæ in the anterior portion of the left. The medullary stratum connected with this part of the brain, and contributing to form the roof of the ventricles, remarkably softened. Some slight traces of softening on the opposite side. Cerebellum tolerably hard; in the interior of its left lobe, the very centre of the arbor vitæ, a blackish red point, of the size of a pea, and enclosed in a distinct membrane. Thorax: traces of chronic peripneumonia in the superior lobe of the left lung. Heart very large; left ventricle much dilated, and thicker than usual. Points of ossification in the orifice and arch of the aorta. Abdomen: gastric mucous membrane somewhat red, but wholly free from inflammation.

Sixth Case.—Dec. 30th, 1819. A stout woman, of sanguine temperament, and aged sixty-seven, was brought to the

infirmary with complete suspension of the senses and locomotion. At the age of thirty-six, she had been seized with insensibility and general paralysis, which had continued twenty hours. From this period the patient had experienced, at intervals, severe pain in the right arm, which swelled, and became completely useless. She also felt frequent suffocation, which she attributed to gout. On the 30th of Dec., at evening, after a dispute with one of her companions, she lay down, complaining of headach. Next morning, at four o'clock, she was found in a state of perfect coma. On my visit that day, she presented the following phenomena: Face much injected; skin warm; mouth closed; jaws immoveably set; reclination on the back; pupils contracting as usual. Frequent efforts to speak, but the power utterly lost; right limbs completely paralysed and senseless. Respiration difficult and sonorous; no cough or expectoration. Treatment: irritating injections; sinapisms to the legs. Jan. 1st. No change. Blisters substituted for the sinapisms. 3d. Constipation. Purgative injection. 4th. Incipient slough on the sacrum: constipation still. 5th and following days. Countenance gradually changing. She follows persons with her eyes, and seems to know them. 11th and 12th. Slough enlarging. Profound sleep during the day. 13th. Same state. Violent erysipelas round the blister of the left leg, which was consequently suppressed. 14th. Features expressive of pain, and lank; alæ nasi pinched; eyes dim, tearful, and hid beneath the lids; respiration short and moaning; face covered with a clammy sweat. Death that evening.

Dissection.—A path of ossification, one-fourth of a line thick, and three fingers' breadth across, on that part of the dura-mater corresponding to the left anterior lobe of the brain, and on the surface in contact with the arachnoid. All the vessels loaded, and cerebral substance hard frozen,* and, at first sight, not sensibly altered; but after removal of several slices of the left hemisphere, softening of the whole middle lobe, and part of the anterior and posterior, was observed. The morbid portion, of a greenish yellow colour, was separated from the sound by a distinct greyish white line of demarcation. In the midst of the softening existed an old extravasation of blood. The corpus striatum, softened, displayed traces of apoplexy of ancient date. The cerebellum loaded. All the other internal organs sound.

Seventh Case.—A widow, named Chenet, aged nearly eighty, robust, with broad chest, large head, and short neck, had, in 1816, been stricken with severe apoplexy, and experi-

* The temperature of the atmosphere was at this time very low.

enced, during that year, some recurrences of that affection resembling intoxication. There were some varicose ulcers on the legs. Sept. 22d, 1817, she came to the infirmary, in consequence of headach and loss of appetite. Abstinence and diluents prescribed. That night she was delirious, and got up. Next day, countenance somewhat stupefied, but sensibility and intellect unimpaired. Headach; inappetence; constipation; pulse febrile: respiration and other functions natural. An emollient injection. About 10, A. M., seized with complete loss of consciousness, movement, and sensibility. The occurrence of apoplexy was inferred, and derivations alone directed. 23d, at night, I found the woman perfectly insensible; her face livid, and covered with cold and clammy perspiration. Features decomposed; respiration stertorous; pulse low; deglutition impracticable. Blisters added to the former prescription. Night, same state. Died next morning.

All those who had seen the patient did not for a moment doubt that she had been destroyed by apoplexy, and expected to find considerable sanguineous extravasation. Convinced by preceding observation, that all reputed apoplexies are far from offering this result, notwithstanding the resemblance of the symptoms, I represented to the students that I did not consider it to be a case of real apoplexy. Yet, had it not been for one symptom, I should certainly have bowed to the opinion of the gentlemen present: I mean the delirium, which caused me to suspect the existence of acute inflammation of the brain or its membranes, of which I had recently met with several instances.

Dissection confirmed my opinion.—To the great astonishment of the spectators, we found, independently of traces of inflammation of the arachnoid, the whole central part of the right hemisphere converted into a pulpy mass. The cortical substance was red; and we found between the optic thalamus and corpora striata, a cavity invested with a yellowish membrane, such as has been described by M. Riobé, and containing a violet grey coagulum, of the bulk of a filbert; the result of a former extravasation. The encephalitis had, doubtless, been here the cause of death, and, perhaps, the old extravasation the cause of the phlegmasia, and of the other symptoms to which the patient had been subject.

This case very clearly demonstrates the high importance of observing symptoms, and of directing our attention on all the circumstances which precede or accompany diseases.

Sketches of the Medical School of Gottingen. To which are prefixed some General Observations on the Universities of Germany.

(From the Quarterly Journal of Foreign Medicine and Surgery.)

The remarkable difference which exists between the Protestant and Catholic Universities of Germany, has induced us to defer to the present opportunity, some general observations which we had intended to prefix to that series of articles, in which we purposed to draw a faithful picture of the principal schools and universities of Germany. Viewed as literary institutions, the Protestant universities, which chiefly occupy the north of Germany, are undoubtedly superior to the Catholic schools, and in the words of Madame de Stael, "toute la gloire litéraire de l'Allemagne tient à ces institutions."*

It is well observed, by an amusing modern writer,† that nothing can be imagined more striking than the contrast between an English and a German University. "In the former, the Gothic buildings, the magnificent colleges, the noble libraries, the chapels, the retired walks, the scholastic grace of the costume are all so many interesting indications of the antiquity, the munificence, and the dignity of the institution. But the constitution of a German university has necessarily no monument of architecture, no appendage of dignity, scarcely any decent building belonging to it. The Universität-Gebaüde, or public buildings containing the library and the lecture rooms of the professors barely come under this last description. Indeed, in most universities, the lectures are delivered at the professors' houses; the university being, in fact, only a place where there is a good library and lectures delivered to those who are willing to attend them."

There were, at one time, between thirty and forty universities in Germany. The events of the last twenty years have considerably diminished that number. Without enumerating them all, it will be sufficient for us to state that the most celebrated of them are Gottingen, Halle, Berlin, Jena, Leipsic and Heidelberg.

They are divided into four faculties—Divinity, Jurisprudence, Medicine, and Philosophy. Each department has several Professors. The prince of the country in which the university is situated, is nominally the rector, while a pro-rector,

* De l'Allemagne par Mde. de Stael, Tom. I. p. 156. And for the effect of the Reformation on the Universities, see M. de Villiers's Coup d'Œil sur les Universités de l'Allemagne.

† An Autumn near the Rhine, or Sketches of Courts, Society, Scenery, &c. in some of the German States bordering on the Rhine, 8vo. 1818.

chosen annually from among the professors, exercises all the powers and privileges of head of the university. The professors are appointed by the crown, and receive a small annual salary. Their principal emolument is, however, derived from the students who attend their lectures, and from their literary labours. Perhaps, no class of men concentrates within itself, so much talent, industry, and devotion to science, as the German professors. The welfare and prosperity of an university are generally of so much consequence to the state in which it is situated, and that prosperity depends so entirely on the popularity of its professors, that they are always selected from among those who have by their talents and industry rendered themselves conspicuous in their respective branches of study.

The habits of a German Professor offer few attractions to the man of the world. The extent and variety of knowledge which is required, in a country where knowledge forms the greatest and most enviable distinction, is only to be acquired by indefatigable zeal, by devoting every moment not employed in teaching to vigorous study, and by an almost total separation from the pseudo pleasures of fashionable life. It has of late years been usual in England to ridicule the ponderous learning of the Germans. It would be better to imitate their industry. The circulation of knowledge in Germany is truly astonishing. Every man who makes the least pretension to learning publishes the result of his observations. From the cheapness of books, and the avidity with which they are bought, new opinions are speedily made known, and are quickly confirmed or rejected. The number of living authors is estimated at 14,000: in the year 1800, the number of periodical works was 340. This number has considerably augmented, and at the annual fair of Leipsic it is estimated that the 200 booksellers who frequent it, sell books to the value of upwards of two millions of dollars. All statistical observations of this kind are liable to error; but they serve to illustrate the subject. It has been calculated by a modern writer that thirty-six millions of Europeans depend entirely on Germany for their literary resources, and that six millions more draw the principal part of their literary enjoyment from the same country.

The constitution of the German universities would at first sight appear very favourable to the students. By decrees, even more ancient than the Reformation, these constitute a free body in the state, and except in criminal cases of great magnitude, the ordinary police of the country has no power either of punishment or control. They are in fact only subject, if subject it can be called, to the University Police, consisting of one or two old men acting under the orders of the Pro-Rector. "C'est une belle idée de nos pères que d'avoir rendue les établissmens

d'Education tout-à-fait libres; l'âge mûr peut se soumettre aux circonstances: mais a l'entrée de la vie, au moins, le jeune homme doit puiser ses ideés dans une source non alterée."* There is no gradation of rank or birth, distinctions of country are *professedly* abandoned, and poor and rich are on the same foundation, merit being the sole distinction. So far all is well; but the evils which spring out of this system, counteract many of the advantages. In Germany every one goes to the University. To practise medicine a regular university education is indispensable, while those destined for the army or the law, must qualify themselves by two years residence at some university. They generally therefore enter young, and at 16 or 17 are transferred from the control and discipline of the parental house to a state of the most unbounded license. The prevailing mania is the military spirit, and duels without number are the consequence. Our readers will smile when we tell them that during six months there occurred between three and four hundred duels at one university of 1200 students; of these, only two proved fatal, being fought with the sword, and the person of the combatants well protected. We agree with the ingenious author whom we have already quoted,† that these duels have all the ill effects of brutalizing the feelings without the questionable advantage of exercising the courage. The practice of duelling, though forbidden, cannot be wholly suppressed, and the Government cannot help remembering that from the universities arose that spirit which roused the Germans from their apathy, and urged them to effect the deliverance of their country. When we were in Germany, we lived much among the students, and from what we saw we did not hesitate to declare our opinion, that this spirit, dignified with the name of liberty, but really licentiousness, would sooner or later prove destructive to the institutions which had engendered it; founding our opinion upon the fact that a judicious restraint in youth is the most effectual foundation for a love of liberty in manhood. The late melancholy events at Gottingen have but too well justified our fears.

No peculiarity of dress is enjoined by the university; but a student is known all over Germany by his loose frock, hair flowing down his shoulders, and cap bearing the colour and emblem of the country of which he is a native. The students have a peculiar and secret association, known by the name of *Landmanschaften;* that is to say, the natives of each country unite themselves into a society, and bind themselves to observe all the laws and enactments which may emanate from it. The particular objects which these societies have in view are the

* Mad. de Stael. † Autumn upon the Rhine.

preservation of the student's rights and privileges, the protection of their weaker countrymen, and the regulation of duels, one of the most important considerations of a German student. These societies are prohibited by law, but sanctioned by custom.

In most of the universities there are what are called *Freitische* (free tables) for the poorer students. Independently of those provided by the government, individuals often leave lands or money to support a certain number of these *Freitische.* A student appointed to one of these, receives his dinner daily at his own house. By this excellent plan, the feelings of the obliged are spared and the intention of the donor fully carried into execution, by the support given to merit in distress. Besides the *Freitische* there are *Stipendiem*, or grants of money appropriated to the same purposes—Bursaries or exhibitions. The students reside in lodgings, and dine either at a table d'hôte or have their dinner sent them from an eating-house. Boarding is quite unknown. If we have spoken of the German students with some degree of severity, our readers must not view our remarks as applicable to all. We have too sincere an affection for Germany, too exalted an opinion of her institutions, not to feel keenly the follies of that part of the students who abuse the liberty they enjoy, and afford by their conduct grounds for abridging it.

Among the advantages which the students enjoy, we must particularly notice the cheapness and independence of living at the universities, the low price of books, and the liberality of the public libraries. The general price of lodgings vary at different universities. At Gottingen, which is by far the most expensive, the price of two rooms may be quoted from three to eight louis d'ors for six months; dinner from one to two louis d'ors per month. Every thing else is reasonable in proportion.

No student is so poor as not to possess a library. The difference in the price of books is very great, and yet there is no class of men more generally opulent and respectable than the German booksellers. By contenting themselves with a moderate profit, the books bear a price which put them within the reach of almost every student. In Great Britain, students are obliged to content themselves with elementary books, and to borrow others from public libraries. Independently of the difficulties attending the delivery of works in these institutions, it is no small inconvenience to the student not to have his books at all times, and to be able to study at his own time and in his own way. We are well aware of the difference of price in paper and printing in the two countries, but we contend that they are not such as to justify the difference in price; and if they did, the German booksellers have another drawback: No sooner

does a work of merit make its appearance, than a pirated edition is published in a neighbouring state. And yet with all this, books are one-half or two-thirds cheaper. Thus Blumenbach's Physiology sells in Germany at about 5s. 6d. The translation of the same volume in London, a book of the same size and nature, (and, as books go here, a cheap book,) sells at 12s. This is a favourable instance, for we could show cases where the proportion is as 3s. 6d. to 15s. We had the pleasure of knowing several eminent booksellers in Germany, and they were unanimous in their opinion that putting extravagant prices on books was not only detrimental to science but injurious to themselves. And yet the German booksellers are not illiberal to authors. We could quote many instances of this in our own profession, and in the other departments of literature sums have been paid for works which would not disgrace the magic press of Albemarle-street. Voss, the German translator of Homer, received for the first edition 10,000 dollars, and Goethe 1000 dollars for "Herrman and Dorothea," a little poem, which is every where to be bought for a shilling or two. Such examples might be multiplied *ad infinitum*.

There is another advantage which the schools of Germany afford—a very considerable facility of dissection. While our present restraints upon the study of anatomy exist, so that it cannot be pursued to any useful extent, or at any reasonable expense, nor without exposing the student to the vengeance of the law, or the dread of violence from popular prejudice, it is in vain for us to hope to rival the Germans in the study of elementary, much less of minute anatomy. The smallest school in Germany is better provided with subjects than any of our universities or even hospital schools, and this without violating the feelings of any one. The rooms are in general supplied by the dead bodies of those who die in the hospitals, and who have no friends or relations to claim them. We do not at present enlarge upon this topic, because we propose in an ensuing number to present our readers with a somewhat extended article on the subject. In the mean time, we rejoice that this subject has not escaped the notice of one whose eloquence can hardly fail of success when the object is, as in this, to benefit the cause of humanity and improve the profession of which he is so great an ornament.*

The public libraries in Germany are better conducted and more useful than ours. They are not so much composed of old and curious books, as of works of general utility. They are perfectly open to the students, nor did we ever hear of a book being purloined or defaced.

* See the Hunterian Oration for 1819.

In earnestly recommending the schools of Germany to such of our countrymen as may visit the Continent, we must be understood as addressing ourselves only to such as view the profession of medicine in the light of a liberal and enlightened science: to others, the appeal would be in vain. The former we must exhort, not to be deterred by the manner in which Germany and her schools are often mentioned in this country, and that too by men whose reputation makes them an authority. They speak of the Germans as illuminati, as proficients in animal magnetism and nothing else, as mere book-men, &c. &c.; but neglect to observe, that no country has adorned the profession of medicine with so many eminent men, or laboured more assiduously in her cause, than Germany, the land of Hoffman, and Richter, and Meckel, and Walter, and Wrisberg, and Zinn, and Schmidt, and Hildenbrand, the land which still boasts of Franck, and Soemmerring, and Blumenbach, and Beer, and Springle, and Hufeland.

The German student enters the profession much better prepared than the generality of our students. A thorough knowledge of the classics, and some acquaintance with natural philosophy are considered indispensable; while most of them possess sufficient literary acquirements to feel the dignity and importance of the profession upon which they are entering. Their diligence is unwearied and universal.

One great cause why the productions of the German school are so little known or valued in this country, is the ignorance of the German language which is so generally prevalent. The war having suspended our intercourse with the Germans, our knowledge of their labours has been derived from French translators, the very worst medium through which it could have been conveyed. It cannot however be denied, that with all the zeal and industry which the Germans have displayed, the benefit derived from the application of their vast learning to practical purposes (whether in our profession or in other sciences), has not been equivalent to what might have been expected from their acknowledged talents and unwearied industry. The fault has not lain with them, but with the peculiar constitution of their country. Divided into a number of small and inconsiderable states, which were bound by no common union and cemented by no common feeling, its general resources were weakened, and too few opportunities afforded for putting scientific discoveries to the test of practical application. Discoveries often lay dormant, or, in the struggle to make them known, were seized by nations more happily circumstanced, and their real country and author forgotten.

Lessing has exposed this feeling in one of his charming fables so happily, that we shall give a translation of it to our

readers. "A hen which had become blind, continued to scratch together her little heap of corn. Little did it avail the industrious fowl, for another hen, which was not blind, followed her steps and enjoyed the fruits of her labour. As soon as the blind hen had laboriously scratched up a grain, the other carried it off.—The industrious German collects the knowledge which the lively Frenchman puts to use."

GOTTINGEN.

This university was founded by George the Second, when Elector of Brunswick and Luneburg, on the 7th of December, 1736. The imperial license had been granted by the Emperor Charles VI. so early as January, 1733, and Lectures were first delivered in October, 1734. The university was solemnly opened on the 17th of September, 1737, and named, after its founder, the "Georgia Augusta."

The celebrity which this university has acquired in so short a period of time, is to be ascribed to the many eminent men it has ranked among its teachers. Of these we need only mention Haller and Richter, Zinn and Röderer among its former, and Blumenbach, Osiander, Langenbeck, and Himly, among its present professors, to prove that its title to be ranked among the first medical schools, is as just as the claims which it undoubtedly establishes on the merits of so many illustrious characters in other departments, to be called the first literary and philosophical school in Germany.

In regard to the course of study to be pursued to entitle the student to a diploma, there are no fixed regulations here, nor, indeed, in any of the Protestant universities of Germany. All that is required is, that the candidate should be able to undergo his examination. No questions are asked respecting the duration of his studies, or the university where he has acquired his knowledge; but, in general, it requires three or four years previous study to be able to pass the examination, which is strict and fair. It embraces all parts of theoretical and practical medicine, including botany and chemistry, and a thesis in Latin is subsequently defended before the university. The expense of graduating is about forty louis d'or, and the examinators are the members of the medical faculty, generally the four eldest. Medical students generally spend three or four years at Gottingen, graduate, and then complete their studies in the hospitals of Vienna or Berlin. It is, in fact, chiefly a literary medical school, and the opportunities of dissecting excepted, bears the same relation to Vienna and Berlin, as Edinburgh or Glasgow does to London. The opportunities for study are unequalled. The free and unshackled use of a most splendid library—the

excellent lectures of its celebrated teachers, and these at a very moderate price—the peculiar situation of the university, in a small town, from which public amusements and other temptations to idleness are banished—where there is little or no general society—and where the general tone and habits are purely literary, are advantages which few universities in Europe combine.

In 1815, the number of students at Gottingen was 860; of these 604 were foreigners, (i. e. not Hanoverians), and 146 medical students:

In 1816, there were	1132—of these,	745 were foreigners—	234 medical.
1817,	1160	710	223
1818,	1158	686	210

An unfortunate disturbance which broke out among the students last year, has greatly reduced the number; but we are happy to learn, that it is rapidly regaining its former numbers, and that the storm which threatened its entire destruction, has purified it of many things which obscured its advantages.

The salaries of the professors depend on government, and are not generally known. They vary according to the merit and popularity of the professor. Thus, a young professor may receive only 400 or 500 dollars, perhaps less; while 1500 are given to tempt a man of established reputation to come and settle in the university. We believe that no professor in Gottingen has more than 1500 dollars—few so much.

There are three hospitals in Gottingen:—1. A medical and surgical hospital, under the care of Professor Himly. 2. A surgical hospital, under Professor Langenbeck. 3. A lying-in hospital, under Professor Osiander. We shall speak more particularly of them immediately. There is also a botanical garden, a museum, chemical laboratory, physical apparatus, and a public library. The lectures of the professors are all delivered in German, and here we may observe, that in no part of Germany is the language better spoken than in Gottingen, and that to foreigners it affords the advantage of a most excellent master, Professor Benecke, Professor of the ancient German, and one of the first Teutonic scholars now living. The terms of study are called Semestres; the one commences on the 26th of April, and lasts about five months—the other some time in October.

The following are the lectures delivered:—Practice of Medicine at 10—Medical Surgery, at 3—Medical Clinic, at 11, by Professor Himly. Physiology, at 9—Natural History, at 5, by Professor Blumenbach. Surgery, from 1 to 3—Diseases of the Eye, at 7—Surgical Clinic, at 8—Neurology, at 6, p. m. by Professor Langenbeck. Osteology and Syndesmology, Tuesdays and Fridays, at 11—Anatomical Examinations, at

9, by Professor Hempel. Midwifery, at 9—Medical Jurisprudence, at 4, p. m. by Professor Osiander. Special Pathology, at 6—Special Therapeutics, at 7, by Professor Stromeyer, the father. Chemistry, General Botany, at 7—Agricultural Botany, at 8—Botanical Excursions, by Professor Schrader. Chemistry, at 9—Analytic Chemistry, Tuesdays and Fridays, at 11—Experiments in Chemistry, twice a week from 1 to 3, by Professor Stromeyer, the son. Mineralogy, at 7—Geology, at 6, by Professor Hausmann. These lectures are delivered every day except Sunday. The fee to each course is generally a louis d'or, and never more than two.

Besides the public lectures, the professors are in the habit of giving private instructions to one or more pupils. These are called privatissima. Professors Himly and Langenbeck each give privatissima on the operations of surgery, and on diseases of the eye. Three or four pupils generally unite. The professor commonly receives ten louis d'or for a privatissimum. There are also several private lecturers, but none of equal eminence with the professors.

The professors are, in general, very kind and communicative to the students, and appoint a certain hour for receiving and conversing with them at their own houses.

THE LIBRARY

Is one of the most splendid and useful in the world, and occupies a large and convenient building in the centre of the town. It consists of upwards of 200,000 volumes. It possesses few manuscripts or curiosities, but aims at general utility. The books occupy nine large halls, and are arranged in a systematic order. In one department are the theological, in another, the medical books, &c. &c. These are again divided, and under the heads of neurology, midwifery, ophthalmology, jurisprudential medicine, &c. &c. the student finds every thing which has been written on the particular subject of his studies. The last alphabetical catalogue consists of 180 volumes folio. There are generally about 3000 books in circulation among the students. To keep pace with the progress of knowledge, about 5 or 6000 dollars (£1000), are annually expended in new works. These funds are derived from what is called the Cloister-fund—the produce of the cloisters and convents, which were suppressed at the time of the Reformation, and which in Hanover have always been devoted to the support of libraries and charitable institutions.

This sum would not, of course, be sufficient for the support of this noble library, were it not to receive many donations from authors. The learned societies are in the habit of sending their transactions. Among these we observed the name of

the Royal Society. His Royal Highness the Prince Regent also, has lately presented a most splendid collection of books to this library.

In order to partake of the advantages of the library, it is necessary to produce an order signed by a professor, and over his signature, the title of the book, and the name of the borrower. Every professor gives these orders blank to any student whom he knows, and they are afterwards filled up by the student. Although the professor is responsible, there is no instance on record of a book being purloined. The establishment consists of a head librarian (Reuss), a second ditto (Benecke), two custodes, a secretary, and two assistants. The library is open every day. No fees of any kind are paid.

ANATOMICAL AND SURGICAL SCHOOL.

Although the Anatomical School is professedly under the charge of the Prosector, Professor Hempel, it owes its chief advantages to the diligence and celebrity of the Professor of Surgery, Langenbeck. A building was indeed devoted to anatomical pursuits as early as 1738, but in a literary university we seldom find that much attention is paid to practical anatomy. The Surgical Hospital is a large and commodious building, and has been fitted up in a very judicious and useful manner. It is devoid of architectural ornament, but is placed in an open garden, and well ventilated. It contains two lofty wards, adjoining each other; the one for men, the other for women: each ward contains twelve beds. At the one extremity are the nurses' rooms, the other leads to the operation room, which is built in the form of an amphitheatre. Two small wards attached to the operating room, are devoted to diseases of the eye, each containing four beds. Under the Operating Theatre on the ground floor is the Surgical Auditorium, and adjoining it a most splendid collection of surgical instruments and bandages.

Patients are received into the hospital without the payment of any stipend or fees, the character and interest of their complaint being the chief recommendation in an hospital which is purely clinical. A small hospital possesses great advantages, where there is, as in Gottingen, a sufficient number of patients from which interesting cases may be selected. The reputation of this hospital being very great, patients often come a distance of fifty or one hundred miles to it, but only curable and instructive cases are admitted. By these means no semestre passes over without affording the student the opportunity of seeing almost all the important operations.

The Surgical Hospital is attended by from seventy to eighty

students, who are divided into practicanten and auscultanten—i. e. practitioners and listeners. The former consist of those who have attended a previous course, and now take in rotation the charge of a patient. On doing this they are obliged to give an account of the disease, and answer all questions which may be put by the professor respecting the anatomy, pathology, and treatment of the patient. We were pleased in observing the great attention which Professor Langenbeck paid in these clinical exercises to relative anatomy. He omitted no opportunity of impressing on the students, that the mere dissection of bodies could never make them good anatomists, and that as surgery without the knowledge of anatomy would be a dangerous art, so anatomy without a constant reference and application to the living body would be vain and futile.

Professor Langenbeck in his lectures on surgery, which he delivers daily from one till three o'clock, gives half his course in a semestre. They might more properly be called anatomical and surgical lectures, for the professor first demonstrates the anatomy of the different parts in their healthy state, before he proceeds to speak of them in the various forms of disease which require surgical assistance. The Anatomical Theatre is annually supplied with about eighty bodies. During the winter these are used for anatomical demonstrations, and in summer are devoted to the performance of surgical operations. The anatomical demonstrations and surgical lectures are generally attended by 120 or 130 students, of these about forty are *praeparanten* (dissectors), and assist in the making of anatomical preparations.

The foundation of the Surgical Hospital is entirely due to Professor Langenbeck. In 1807, at his representations, a certain sum was appropriated to its support from the Cloister-fund. In 1808 the professor built the present hospital, which is still his own property, the Hanoverian Government paying him a yearly rent for it. The beautiful collection of surgical instruments also belongs to the professor. Besides those which he has himself collected, he purchased the collection of Heister, which, in an historical point of view, is probably unique. The whole as it now stands is undoubtedly the first in Germany. It comprises all instruments that have ever been used in surgery from the earliest days to the present time.

Professor Langenbeck, as a practical surgeon, is unrivalled in Germany. We have seldom seen a man so enthusiastically devoted to any pursuit, or who brought to the profession of surgery more capability of excelling in it. He has been known for some time as an excellent anatomist, but it was his situation in the army that brought him into notice as a surgeon. He particularly distinguished himself at Waterloo, where he held the

office of surgeon general to the Hanoverian army, by his indefatigable zeal, brilliant operations, and the excellent arrangement of his department. He not only acquired great distinction, but is said to have enriched himself during the campaign. It is much to his credit that all these circumstances have rather contributed to increase than slacken his zeal and exertion. He is unwearied in the pursuit of his favourite studies. Although he has a very considerable practice, and lectures five hours every day, he is in the dissecting room before it is light, and devotes to it every moment which he can spare. He has founded a museum, chiefly formed from the labours of himself and pupils, and which contains some very beautiful preparations. He is also the author of a periodical work, and has written some other books.

Of his lectures we cannot speak from personal knowledge. From the report of others, and the notes of our friends, we should judge them to be plain practical lectures, such as would be very acceptable in our English schools. They are not, however, suited to the taste of German students, who expect from their professor not only an account of a disease, but the opinions of every author who has ever written on it from the earliest ages downwards. Now Professor Langenbeck is more a practical than a book man. His time has been more spent in the dissecting room than the library, and he is consequently not so well versed in the literature of surgery as some of his countrymen who have probably never handled a knife. One of the highest proofs of good sense and zeal for his profession which the professor has given, is complying with the feeling of his country, and devoting a large portion of his time to the study of ancient and foreign authors. As an operator, he is unrivalled in his own country, and we are not aware that he is excelled in any. He is clear and decisive in his judgment—rapid and elegant in his operations. His whole style of operating resembles very closely that of Mr. A. Cooper.

(*To be concluded in our next.*)

On the Employment of the Prussic Acid, as a local Application, in Impetigo. By Anthony Todd Thomson, F. L. S.

(From the London Medical and Physical Journal.)

Having been convinced, by numerous experiments upon quadrupeds, and, also, from closely watching its effects upon the human body when taken into the stomach, that Prussic acid is a direct sedative, and diminishes, more suddenly and effectually than any other sedative, the sensibility of nerves, I was induced to investigate its powers as a local application, in

cutaneous affections accompanied with great itching and irritability. I am now induced to publish the result of my experience, in order that the attention of the profession may be directed to this employment of Prussic acid; and that its claims as an external remedy may be justly appreciated.

The first disease which I shall mention, as being more rapidly benefited by the external application of Prussic acid than by any other remedy, is Impetigo. In this affection, the discharge, which exudes from under the flaky crusts that characterize the eruption, is thin, and so extremely acrid, that it excoriates even the surrounding healthy skin, wherever it touches it, and thus spreads the disease to unaffected parts. The itching and tingling in the diseased limb is almost insupportable, particularly at night, when the patient is warm in bed; and little benefit is derived from the employment of any of the ointments or lotions commonly prescribed, or even from the internal exhibition of the largest doses of opium: indeed, the abraded surface, frequently, becomes so morbidly sensible, that the mildest applications cannot be borne. In this case, the torments of those afflicted with this disease are most lamentable; and, hitherto, the sympathy of the practitioner has been the only consolation he could offer to his patient.

Reflecting on the causes of this extreme irritability of the surface in Impetigo, I was led to conclude, that, if the nervous susceptibility of the diseased surface could be moderated, the discharge would necessarily become milder; and the excitement of the superficial vessels, which supply the discharge, being diminished, the exudation would not only be rendered milder, but be greatly diminished in quantity. No medicinal agent promised more certainly to effect such a favourable change than Prussic acid; and I had the satisfaction of witnessing my anticipations of its powers verified, in the first case which presented itself after my determination to employ it.

I was not, however, so sanguine as to imagine that any external remedy, even the most efficacious, could cure a disease depending on a disordered state of the general habit; but I confess that, after having seen the powerful sedative effects of the Prussic acid as a local application, I was in hopes that by its internal exhibition at the same time that it was externally employed, the morbid irritability of the system, on which I conceived the disease to depend, would be brought under control by its means; and the healthy action of all the secerning and excretory organs readily restored. In this expectation, however, I was disappointed; and my next object was to investigate the state of the digestive organs, and to regulate the internal treatment by the result. I soon ascertained that, in several cases of the disease which came under my notice, that

there was a superabundant acidity of the stomach; that the alvine evacuations were slimy, irregular, and denoted a deficiency of bile in the intestinal canal; and that a daily, although a slight, febrile paroxysm made its attack in the evening. With these facts clearly before me, I resolved to treat the disease in the following manner:—To alter the action of the liver, by throwing into the system a mercurial preparation, but in such doses as would enable it, also, in combination with an active purgative, to stimulate the orifices of the hepatic ducts, and thus increase the supply of bile to the duodenum; to neutralize, by an alkali exhibited in large doses, the acid present in the stomach; to improve the secretion of the stomach itself, by the alkali diminishing, as I conceive it always does, the irritability of the coats of that organ; and, at the same time, to moderate the local irritation, by the external employment of the Prussic acid. The two following cases are selected from many others, as a practical illustration of the success of this method of treating Impetigo, merely because they occurred in persons placed in opposite ranks of life; and, therefore, display the effects of the treatment under very different circumstances.

Case I. 14*th February*, 1821.—James Exton, æt. 22, by trade a plasterer, and living in Clifford-row, Pimlico, was this day admitted a patient of the Chelsea and Brompton Dispensary. The patient was a stout man, of a sanguine temperament. The whole of the left leg, from the instep of the foot to the knee, was more or less covered with an inflammatory eruption, which, on a close examination, consisted of minute pustules surrounded by a red, glazed base; and, where they were unbroken, the pustules were filled with a yellowish fluid. In many places along the tibia, where the bone is covered by little more than the skin, this surface was excoriated, and the intermediate cuticle red, shining, and perforated with minute pores, from which a thin ichorous discharge poured out; while other parts of the surface were covered with thin, yellowish, flaky scales, turning up at the edges, and oozing out, from beneath them, the same ichorous discharge that was supplied by the broken pustules. The patient complained of the most intolerable itching and tingling of the limb, which completely destroyed his rest at night, and obliged him to rub and scratch the diseased part; although he was well aware that, by doing so, he only increased the evil. The pulse was small, but natural in point of quickness; the bowels were rather open than otherwise, and much disturbed with flatulence; but his appetite was good, and, to use his own language, "he would be quite well, were his leg but sound, and he could sleep at night." He could assign no cause for the disease, (which had, now, existed for more than

six weeks,) unless it might have arisen from drinking cold porter, while he was in a state of perspiration from his work. He had tried a great variety of ointments, which had only increased the tingling and itching; and had taken a considerable quantity of purgative medicine.

As this was decidedly a case of *Impetigo sparsa*, I resolved to try the effect of the treatment which had suggested itself to my mind; and, accordingly, the following medicines were prescribed for him:

℞. Pilulæ Hydrargyri,
—— Hydrargyri Submuriatis compositæ, āā ʒss.
Extracti Colocynthidis, ʒj ss. Simul contunde, et divide massam in pilulas æquales xxx. quarum sumat j mane et ij nocte, quotidie.

℞. Extracti Sarsaparillæ, ʒiv.
Sodæ Subcarbonatis, ʒviij.
Infusi Cinchonæ, f. ℥xij. Misce ut fiat mistura, cujus cyathus sumatur ter quotidie.

℞. Acidi Hydrocyanici (*Prussici*), f. ʒiv.
Spir. Vini rectificati, f. ℥j.
Aquæ Distillatæ, f. ℥x ss. Misce ut fiat Lotio, diligenter utenda.

He was ordered to be very regular in taking his medicines; to keep the whole of the leg constantly moist, by means of soft rags soaked in the lotion; and to live on a light animal diet, avoiding sweet things, raw and crude vegetable matters, spirits, and malt liquor.

17*th*.—The leg was much improved in appearance; the inflammation considerably abated, and the discharge lessened. The greatest relief had been experienced from the application of the lotion, in allaying the itching; and he had enjoyed two nights of good repose, which had much refreshed him. He was ordered to continue the same plan; which was pursued, with scarcely any variation, until the 19th of May, when he was discharged cured; the skin of the leg having recovered its natural colour, and every symptom of the disease having disappeared a week prior to that period.

On the 30th of May, however, James Exton was again admitted a patient of the Dispensary; the disease, of which he had been so recently cured, having attacked the other leg. On questioning him, I found he had been in the country, living rather freely amongst his relations. The eruption was extended over the front only of the leg, and much less formidable in its aspect than it had been in the other limb. His bowels were much confined; and his digestive organs were evidently more deranged than on the former occasion. The disease had appeared five days ago, and, as it was increasing, he had returned

to Chelsea, for the purpose of again placing himself under my care.

℞. Pilulæ Hydrargyri Submur. comp. ʒss.
Extracti Hyosciami, gr. xviij. Ft. pilulæ sex. Sumatur j omni nocte.

℞. Extracti Sarsaparillæ ʒiij.
Sodæ Subcarbonatis, ʒvj.
Infusi Cinchonæ, f. ʒxij. Misce, sumantur cochlearia amp. iij. ter quotidie.

A brisk purgative was ordered to be first taken; and he was directed to bathe the limb, frequently, with tepid bran gruel, and to apply over it the Oxyd-of-Zinc ointment, spread on lint; as I was desirous of ascertaining how far the constitutional treatment would succeed without the aid of the local sedative.

June 2*d*.—The eruption is no better in appearance, and much more moist and irritable. Continue.

6*th*. Nearly in the same state. Continue.

9*th*.—He now complained much of the increased itching and irritation, and begged hard to have the same lotion that had formerly been ordered for him. It was, accordingly, ordered; but with three fluid drachms only of the acid; and the same internal treatment was continued.

13*th*.—He has found much relief from the use of the lotion, and the improvement is very apparent in the aspect of the eruption. He had been, however, so much purged, and his tongue was so much chapped and so sore, that I ordered him to discontinue the pills and the mixture last described, and gave him the following:

℞. Pulveris Rhei, gr. viij.
——— Ipecacuanhæ comp. gr. vj. Pulvis quam primum sumendus.

℞. Misturæ Cretæ, f. ʒvss.
Pulveris Ipecacuanhæ comp. ℈j.
Tincturæ Catechu, f. ʒiv. Misce ut fiat Mistura, cujus Cochlearia amp. ij 6tis horis sumantur.

20*th*.—His bowels being now quite comfortable, he returned to the use of the pills and mixture ordered on the 30th of May; which he continued, with the lotion, until the 20th of July, when, every appearance of disease having left him for a fortnight, he was discharged; and has since continued perfectly well.

The same plan of treatment has been pursued in every case of Impetigo that has since come under my care at the Dispensary; and, although these have been numerous, and some of them cases of very long standing, yet I have not met with one instance which has not, sooner or later, yielded to its power.

Case II. J. C—ll, esq. applied to me, in the beginning of last year, on account of an eruption which had appeared on his shin, and which he attributed to the skin having been fretted by the stirrup-leather in riding. On examination, I found an eruption on the shin, in the form of two distinct spots, one about three inches in length and two in breadth, and the other an inch in diameter in both directions. Each spot consisted of a highly inflamed, rough, scaly zone of an irregular form, surrounding a glazed, red portion of skin, perforated by numerous, very minute, ulcerated pores, oozing a thin, acrid ichor; which in some places, had concreted into thin flaky scales, turned up at the edges, and of a greenish yellow colour. Beyond the circumscribing zone, several small clusters of pustules were perceptible, which, extending in every direction, appeared disposed to coalesce: and in fact, by the union of such clusters, new zones were successively formed on the outside of the old, and the disease gradually spread itself over the greater part of the lower limb. The pulse was rather small and quick, the bowels were irregular, and the tongue was red and chapped; but Mr. C. did not, otherwise, complain of any constitutional disturbance.

From the nature of the eruption and its progress, (for I was informed it had commenced in two small clusters of pustules,) there was no doubt that the disease was the *Impetigo figurata* of Willan. Mr. C—ll had paid little regard to it, until the spots began to enlarge, and had done nothing more than washing the affected parts with Goulard-water, previous to the period at which I was consulted, which was about six weeks after the first appearance of the eruption. It is unnecessary to detail the variety of treatment, both local and general, which was resorted to for several months. After every change of remedies, the symptoms apparently abated, and the skin seemed about to acquire its healthy state; but these favourable appearances were only transitory and fallacious, and, after any plan, which at its commencement promised a satisfactory result, had been pursued for a short time, a relapse always took place; and the symptoms, instead of appearing improved, seemed to have acquired only more virulence by their suspension. Finding all the usual means unsuccesful, I advised Mr. C—ll to go to Worthing, to try the tepid sea-water baths. He remained there two months, and was certainly much benefited by the baths; but, soon after his return to London, the disease recurred, and I was again consulted as to the means necessary for its removal.

Having now had sufficient proofs of the efficacy of Prussic acid in impetiginous affections, I told him there was every reason for thinking he would soon get well. He agreed to try any plan I might suggest; but, as he had previously taken much

medicine, he trusted the remedies would consist chiefly of external applications. I promised to limit the internal treatment as much as possible; and therefore, on the 14th of September, prescribed for him the following pills and lotion:

℞. Pilulæ Submuriatis Hydrargyri, ʒj.
—— Aloes cum Myrrha, ʒjss. Simul contunde et divide in pilulas æquales xxx. Sumantur iij omni nocte.

℞. Acidi Hydrocyanici, f. ʒij.
Aquæ Distillatæ, f. ʒv. ss.
Spir. Vini rectificati, f. ʒiij. Misce ut fiat lotio parti ægrotæ applicanda.

In a very few days, the itching and tingling, which had again become very troublesome, abated; and at this time (18th January,) the disease is completely removed.

Were I anxious to multiply cases to illustrate the powerful sedative effects of Prussic acid in Impetigo, the case-books of the Chelsea and Brompton Dispensary furnish ample means. In one of the cases detailed there, the disease had existed twelve years; and the female, a servant, had been two years attending the Dispensary, but in the last four months only had she received any permanent benefit, and that arose from the use of the Prussic acid, which at length effected a perfect cure. I am, however, less desirous to detail my own experience, than to direct the attention of the profession to so powerful an agent in the treatment of a class of diseases which has hitherto baffled almost every means which have been tried for their removal.

I am well aware that the price of Prussic acid is a great objection to its general employment in Dispensary practice; and I regret that my experience does not permit me to say that its place can be supplied by any of the vegetable substances which, from their flavour, evidently contain Prussic acid. At least, I have been disappointed in my trials of decoctions of Laurel-berries, the Bitter-almond emulsion, and the strongest infusions of Peach, Nectarine, and Laurel leaves. I propose trying the Cyanate of mercury, which is more easily prepared, and is consequently, less expensive than the Prussic acid.

In another communication, I shall detail my experience of the utility of Prussic acid in *Acne rosacea*, and some other cutaneous eruptions.

A case of Apoplexy, in which the Oil of Croton was given with apparent Advantage.

(From the London Medical Repository, for December, 1821.)

Mrs. Cole was attacked with intense pain in the head, which was accompanied by transient loss of recollection. From this

state she quickly recovered, and became violently sick. The skin was cool; the pulse quick, but regular and full. Twenty ounces of blood were taken from the arm; and a bolus, composed of ten grains of calomel, with as much of the extract of colocynth, was given, and the dose ordered to be repeated in an hour. A strong cathartic enema was injected. After the second dose of calomel she became oppressed and incoherent, and gradually sunk into coma. The bleeding was repeated, leeches applied to the head, and sinapisms to the feet, and the injection ordered to be repeated every hour. At the end of six hours no effect had been produced by the purgative; she continued in a state of profound stupor, breathing slowly, and with great effort. This state of insensibility, precluding the use of medicine in its usual forms, induced me to try the effects of the oil of croton. A drop was placed upon the tongue, the bleeding repeated, and cold applications applied to the head. At the end of four hours the bowels were copiously relieved, a very considerable purgative effect continued, and she became at last perfectly sensible. The action of the bowels ceasing for four hours, she again sunk into a state of stupor. The oil was repeated, leeches again applied to the head, and the sinapisms renewed. The bowels were again actively excited, and the same relief followed. The purging was kept up by the exhibition of saline and resinous purgatives. By the adoption of measures which it is not necessary to detail, my patient is gradually recovering.

That the relief obtained in this case was closely connected with the profuse discharge which took place from the bowels, will scarcely admit of doubt. Whether the oil of croton, or the calomel which was previously given, produced the purging, it may not be so easy to determine. I am induced to attribute it to the former; not only from the known qualities of the medicine, and from the effects which followed its repetition, but also from the state of stupor in which my patient continued some hours after the calomel was given, evincing an absence, or at least no great increase, of intestinal secretion. Its operation was not very violent, nor did it occasion more distress than usually accompanies the effects of active cathartic medicines. Attributing the decrease of diseased action to the purging, and the purging to the oil of croton, the result was highly gratifying, and induces me to hope, that the medicine will be found eminently useful in attacks of disease in which the animal functions are suspended.

I firmly believe that considerable advantage was derived from the use of the tincture of colchicum, prepared from the seeds. It was given with the purgative, after evacuations had been carried to an extent, the propriety of which the emaciated

state of my patient led me frequently to doubt. That extreme restlessness which invariably attends an increased momentum of blood directed to the brain, was greatly, and I may almost say immediately, controlled by it. The effect of the purgative was not increased, though its operation did not occasion so much distress; nor, indeed, was there any other perceptible difference, than a decrease in the frequency and force of the heart's action.

Selected Reviews.

A Synopsis of the Diseases of the Eye, and their Treatment, &c. By Benjamin Travers, F. R. S. Surgeon to St. Thomas's Hospital. Octavo, pp. 426. London, 1821.

(From the Medico-Chirurgical Review and Journal.)

In our last number from page 235 to page 262, we offered a comprehensive, and, at the same time, minute analysis of the *pathological* division of Mr. Travers's excellent work. We now proceed to the completion of our task, by a similar notice of the therapeutics, medicinal and operative, which this able surgeon has presented to his brethren, as the fruit of ample experience in ophthalmic surgery. If we have devoted a space, in this Journal, somewhat out of proportion to the size of the work reviewed, it was not without due consideration to the interest of the public—an interest which must always be identical with that of the Journalist himself, where the latter is *guided* by common sense and sound wisdom, rather than *impelled* by the gales of passion and personal feeling. Our reasons then for being minute in our analysis of the work before us are two-fold—first, because ophthalmic science is beginning to spread extensively through all ranks of practitioners; and, secondly, because the expense of the plates cripples the circulation of the volume among those widely scattered members, or humble grades of the profession, for whose benefit *in particular* this Journal was first instituted, and we hope will be ever conducted. Where the original, therefore, cannot travel, we deem ourselves always bound to provide the best possible *substitute*—where it *can* and *ought* to travel, we hold out the strongest temptation for accelerating its progress.

The third part of the work before us is divided into four chapters, which are subdivided into sections, and occupy altogether about 140 pages of letter-press. In this portion we were much pleased to observe that our intelligent author endeavour-

ed "to seize upon the principles of treatment, to the exclusion of over-minute practical details."

"For it would be idle to suppose that general principles of treatment require to be enforced, after the nature of a disease is clearly pointed out. The maxims and modes of successful practice, so far as they are hitherto known, are accessible to all inquirers of ordinary capacity; and that man is unworthy of his profession who seeks to mystify them, for the purpose of being esteemed wiser than his neighbours." 245.

In the above sentiments we cordially agree with Mr. Travers.

1. *Simple Ophthalmic Inflammation.* Where this is unconnected with constitutional disorder or diathesis, the loss of a few ounces of blood, the use of soothing applications and cathartics, are sufficient to subdue it. Febrile irritation rarely accompanies this form, and when it does, it yields to the same means. In many cases of this kind, general blood-letting is unnecessary. Cupping possesses advantages over leeches, especially when the latter are applied on the eyelids, as they there produce swelling and discolouration—or even troublesome erysipelatous inflammation. In urgent cases, however, the lancet must be used, in order "to make the system sustain and feel a reduction of power." Bleeding from the angular vein and scarification of the conjunctiva are highly beneficial in chronic, but objectionable (especially the latter) in acute inflammation. In respect to lotions, he does not consider *medicated* ones of any material efficacy. Cold applications, though they are momentarily agreeable to an acutely inflamed organ, are nevertheless followed by reaction, with an increase of heat and pain.

"When, however, the acuteness of inflammation has subsided, and the sensibility of the part is in proportion diminished, the effect of cold is only tonic, and has a salutary tendency to restore the balance of circulation, I therefore decidedly prefer, as a general practice, a tepid application in the painfully acute stage of inflammation, and I appeal to general observation in proof of its efficacy in promoting a grateful sense of coolness, and a more permanent relief from pain." 250.

Our author has found narcotic lotions and fomentations very various in their effects on different people—irritating in some, anodyne in others. Though warm fomentations are best in the acute stage, they should not be continued longer than is necessary, otherwise they prove injurious. When the vascular congestion and morbid sensibility are reduced, cold lotions, of a slightly tonic quality, may be substituted for the warm, with advantage. The sulphates of alum and zinc are the best. The

œdematous elevation of the conjunctiva indicates feeble action, and is often combined with gastric and hepatic derangement. "Solution of tartrite of antimony given at short intervals operates very beneficially in reducing it."

Those ophthalmiæ which assume a chronic atonic character, ab origine, being partial in extent, void of pain, and almost solely congestive, are often restored to sanity by a single stimulus, as the vinum opii, or, which Mr. Travers considers to be equally good, a drop or two of zinc, or lunar caustic solution, or water impregnated with calomel. "Some old women use their urine with admirable effect in these cases."

In certain habits, ophthalmia, whether local or constitutional, becomes worse under the usual depletory measures, the irritability increasing as the strength fails. Here it is that combinations of calomel, opium, and antimony or ipecacuan, are peculiarly serviceable.

"In the treatment of simple acute ophthalmia the object to be kept in view is the soundness of the cornea; the organ is in no danger of deeper injury. The main indication for an activity of treatment beyond that successfully adopted in ordinary cases, is furnished by the state of this membrane. Where the sclerotic conjunctiva is much raised, and the surface of the cornea has in any degree lost its polish, and still more when lymph is effused in or upon the cornea so as to obscure vision, the anti-inflammatory measures must be as vigorous and decided as the integrity of the organ is important. Blood-letting and blisters, calomel, antimony, and the neutral salts comprise all the requisite means." 254.

2. *Strumous Ophthalmia* is almost always atonic and constitutional. Speaking generally, blood-letting is unnecessary, rough and depressing purgatives, injurious. Warm applications are useless—blisters to the nape of the neck and behind the ears very beneficial, especially where the corneal surface is affected, and the consequent sensibility augmented. Issues and setons are also of great avail.

"If the cornea be opaque, calomel, or the blue pill, or the oxymuriate of mercury should be exhibited in combination with opium, slightly to affect the system. The efficacy of the mercurial mainly depends on its combination with opium; it irritates too much if administered alone in quantity sufficient for the purpose." 260.

Here our author introduces a synoptical sketch of the treatment in each particular form of the strumous ophthalmia, which the surgeon will consult with advantage. In convalescence after these forms of ophthalmia, the patient should use some of the following medicines:—infusion of roses—cascarilla—calumba—cinchona—steel—rhubarb and soda—with tonic collyria and

gently stimulating ointments—nutritive diet, country air, shower or sea bath, in summer.

3. *Acute Suppurative Inflammation of the Conjunctiva.*—This is the most dangerous form; its sequelæ being lingering, and sometimes difficult of removal. It is either mild or vehement. In the mild, the cornea is not endangered, unless the disease be exasperated by stimulants. "A very slight haze of the cornea is the worst direct result of it." There is not that excessive swelling of the lids, that intense pain, nor that profuse secretion, which characterizes the vehement acute form of the disease. Nevertheless, these symptoms exist in a degree requiring immediate and active treatment. The alum solution should be early substituted for the emollient fomentations necessary in the acute period. The solution should be directed in a gentle stream over the conjunctival surface, from a syringe furnished with an ivory pipe introduced at the temporal angle of the lids without forcibly separating them. Simple purging and abstinence are generally sufficient to allay the febrile irritation, which is moderate. Topical bleedings and a suppurating surface, opened by blistering the back of the neck, are of great efficacy. Pain and irritability having subsided, the discharge becomes gleety, and the conjunctiva flaccid, tonics, especially bark and acids, are useful. While the cornea appears clear and bright, there is no cause for apprehension.

"The vehement acute suppurative inflammation is sudden in its attack, accompanied with most severe darting pains; the upper lid is in a few hours prolonged upon the cheek, owing to the infiltration and enormous swelling of the tissue connecting the conjunctiva to the tarsus. The cornea is nearly concealed by the fold of conjunctiva which overlaps it all around, and the corneal surface is dusky. The system sympathizes, chilliness is succeeded by a hot and dry skin, and the pulse is frequent and hard. The instant relief of a large venesection is indescribable. The pain is mitigated, if not removed; the pulse softened, and the patient sinks into a sound sleep, and perspires freely. Upon inspection we observe the high scarlet hue and bulk of the chemosis sensibly reduced, and the cornea has a brighter aspect." 265.

A single blow will rarely annihilate this disease, especially if it arise from contagious matter. Repeated bleedings, brisk cathartics, nauseating doses of emetic tartar, will often be indispensable.

"The discharge, at first ropy, viscid, and sparing in quantity, becomes thin, gleety, and more abundant; as the swollen lid subsides, the conjunctiva sinks and becomes pale and flabby: and if, at this period, the pain and febrile irritation being past, the cornea retains its tone and brightness, all is well; the disease has given way, and a

careful but prompt exhibition of tonics, with the use of cooling astringent lotions, will prevent its lapsing into a chronic form. But if, when the lowering practice has been pushed to the extent of arresting acute inflammation, the patient being at the same time sunk and exhausted, the cornea shows a lack lustre and raggedness of its whole surface, as if shrunk by immersion in an acid, or a grey patch in the centre, or a line encircling or half encircling its base, assuming a similar appearance, the portion so marked out will infallibly be detached by a rapid slough, unless, by a successful rally of the patient's powers, we can set up the adhesive action so as to preserve in sitû that which may remain transparent." 267.

It requires great judgment to know how far and no farther we are to proceed with depletion in these cases. Our author does not agree with those who have taken sixty or seventy ounces of blood at one time, from a patient. Perhaps, however, Mr. Travers does not make allowance for the class of patients upon whom these large detractions have been practised. It is not impossible that the surgeons alluded to may have been as capable of appreciating Falstaff's adage respecting valour and discretion, as even Mr. Travers himself. A man should state the result of his own experience, but be cautious how he censures the practice of others; especially if situated in widely different circumstances. It is but justice to say, that Mr. Travers very rarely makes any allusions to mal-practice in others, and then in a very delicate manner.

4. *Secondary Diseases of the Conjunctiva.*—The granular state of the tarsal conjunctiva is a very common result of mild suppurative ophthalmia. Here the lid should be everted, and the projecting granules shaved off from the surface and orbitar edges of the tarsus, with a keen edged lancet, or, if peduncular and prominent, they will be more conveniently snipped off with the flat scissors, taking care to avoid injuring the continuous membrane. When there is an additional vascularity of the cornea, with consequent opacity of the conjunctival covering, "a section of the membrane should be made at one line's distance from the margin of the cornea." In aggravated cases the operation requires to be repeated.

"After the excision of the granulations and the division of the conjunctiva, a solution of the sulphate of copper, or some astringent, is very advantageously employed in the way of injection. A few drops of the liq. plumb. sub-acetatis, or the tinct. opii vinos, are often highly effective." 272.

The lunar caustic is often useful in preventing the regeneration of the granulations. In cases of fungous protrusions or flap-like elongations of the conjunctiva, the treatment consists

simply in the excision of the tumours, which is most conveniently done with a lancet-shaped knife, cutting on both sides. The same treatment is applicable to pannus, the elongated valvula semilunaris, and the caruncular excrescences which sometimes form in clusters between the tarsus and globe.

5. *Pterygium.*—The fleshy pterygium is sometimes a chronic or stationary disease, producing little inconvenience, and not interfering with vision. In such cases Mr. Travers advises its being let alone.

"When, by its progress, it is encroaching upon the sight, it should be raised by dissection as close as possible to the margin of the cornea, and the relaxed portion of the membrane removed by an incision midway between the base of the pterygium and the cornea, and concentric to that membrane." 274.

In this operation Mr. Travers prefers the cornea knife to the scissors. It is inadmissible to meddle with any portion of pterygium that may have encroached upon the cornea. The tendency to reproduction may be checked by the application of the caustic pencil to the section of the tumour.

"The treatment of the membranous pterygium consists in nipping up a crescentic portion of the opaque membrane as near as convenient to the cornea, and freely excising it with a pair of curved scissors. The extremities of the line of excision both in this and the former species should extend beyond the diseased part." 275.

Diseases of the Cornea.—The lamellæ of horny substance in the cornea have no vessels proper to themselves, but derive them from the covering and connecting cellular tissues. It is rare to see red vessels in the interlamellar texture of the cornea; but deposits of adhesive matter and pus are frequent. The cornea is also rendered turbid by congestion in the vessels of its covering or connecting texture—and thus may be said to be inflamed. The cornea, presenting an onyx of adhesive matter, and being thus rendered opaque, indicates strongly the practice for reducing inflammation.

6. The *superficial ulcer* is commonly attended with much inflammation of the conjunctiva, and, by continuance, of the sclerotica. The pain is often spasmodic, and relieved by profuse lacrymation at intervals. Opium should be so combined as to operate on the skin, and the bowels must be kept freely open. Touching the ulcer with solution of arg. nit. is the best local treatment. Warm fomentations afford temporary relief. "It will be found advantageous, if not indispensable, to prevent relapse, to affect the system with mercury, where the inflammation of the sclerotica is intense."

"The indolent and deep sloughing ulcer may be touched once or oftener with the caustic pencil, or washed once a day, or oftener, with the solution. The cleansing of the ulcer and the opaque adhesive circle is the sign for a less frequent use of it, and the deposition of new matter, undergoing a vascular organization, renders its further use hazardous. The occasional use of leeches is often a necessary accompaniment to this treatment. The administration of tonics and sedatives is at the same time essential." 279.

7. When the *hypopion* rises towards the pupil, and the ulceration of the cornea is extending, Mr. Travers advises its discharge by a section near its margin. The *procidentia iridis* from ulcer, if small, should be touched with a fine point of caustic—if large and extending, it may be snipped off with a pair of curved scissors, and the caustic pencil applied. The chronic interstitial ulcer requires only stimulant and astringent injection with blisters, bark, opium, good air, and attention to the chylopoetics.

8. Upon *strumous nebula of the cornea*, Mr. Travers makes some excellent observations, especially respecting the employment of mercury in this and other affections of the eye. No form of recent opacity is so intractable as this. The hydrargyrum cum creta, or the oxymuriate, in small doses, will sometimes succeed better than other forms, and the combination of calomel with antimony better than with opium. Mercurial frictions, in constitutions which evince an insusceptibility to mercury internally, should be employed; and when once it is decided that the mercurial action should be set up, nothing but the clearest demonstration of the patient's inability to support it, should interfere with the full and fair execution of the plan.

"A character notoriously abused by indiscriminate excess, is in much danger of being further injured by half measures. This I think has been the case of mercury. It is not the most delicate frame which is most ready to admit or least able to support it; and it is not the quantity consumed, but the quantity absorbed, which is to be taken into account by the practitioner. The progress of disease during its exhibition is no argument against its continued employment; in this view, unless the system be fairly under its influence, all that has been given goes for nothing; nay, I have had occasion to see many cases in which, after all the signs of absorption were manifest, its operation upon the disease was for a time unobserved, or was null, and was yet ultimately all that could be wished." 284.

On the other hand, an alarming degree of arterial excitement, or certain morbid appearances of the organ, not looked for in the natural and ordinary course of the disease, would determine the practitioner to suspend the medicine.

9. *Staphyloma*, if purely corneal, producing deformity or

irritation and inflammation, should be excised. "The ligature passed through and including two-thirds of the diseased cornea, by means of a curved needle, assists the operation by steadying the globe. If the staphyloma be from dilatation, the iris will be left—if from breach, it is compacted, and removed with the cornea."

10. In the *conical cornea*, the discharge of the aqueous humour is useless, and so are all applications to arrest the disease. Mr. Travers has found repeated blisters, and the more powerful tonics, as steel or arsenic, decidedly serviceable. To these may be added cold bathing, and the practice of opening the eyes in cold spring water. The tubular spectacle frame with a pupillar aperture affords more aid in correcting the vision, than any form of lens.

11. *Sclerotitis.*—Our readers will remember that the symptomatology of the diseases, now under consideration, has been laid down in our preceding number, and that number should be constantly referred to, while consulting this article, which confines itself to therapeutics. Sclerotitis is rarely a primary disease. It is by no means so decidedly influenced by mercury as the iritis. The subjects of it are usually reduced and irritable in a high degree, from suffering with rheumatic inflammation in the elbow, knee, or ancle-joint.

"Though it is necessary to use mercury with more reserve than in other forms of inflammation, to suspend its operation at intervals, and allow the system to recover from its immediate effects, yet its exhibition will be found, in the majority of cases, indispensable. The rude and profuse employment of it hurries on the disease, and the extension of the inflammation to the interior tunics ultimately destroys the organ. The nitric acid may often be exhibited with marked benefit, in the intervals of the mercurial action." 289.

The oxymur. hydr. in doses of an eighth to a twelfth of a grain, or five grains of the hyd. c. creta, are most valuable and beneficial in these cases. The Dover's powder, conium, henbane, and extract of sarsaparilla, either dissolved in decoction, or taken freely in the solid form, are useful auxiliaries.

On the subject of choroid and iritic inflammation, Mr. Travers' sentiments are well known, both through the medium of his own works, and the former series of this Journal.

"One full blood-letting or more should be premised in the acute stage of the disease; and topical blood-lettings during the exhibition of it, are generally required at short intervals. I have now and then found that the incipient inflammation, where it has extended from the conjunctiva, yields to a copious venesection, and two or three brisk doses of calomel and rhubarb, followed up by the infusion of senna; but, gene-

rally speaking, the system must be made to feel the influence of mercury before the disease is permanently subdued. The inflammation which has proceeded to the effusion of adhesive matter, never, in my experience, yields either to the lancet, continued nausea, or full purging; and it is remarkable that the cases presenting this termination of inflammation are always most sensibly and immediately benefited by the remedy in question, whether the cornea or the iris be affected, or any other texture of the body." 291.

After some remarks on the action of mercury in different constitutions, our author closes this section with the following important observations.

"But if any two facts are well established in modern medicine, I apprehend they are these:—first, the power of mercury to arrest acute membranous inflammation, both prior to, and after the effusion of adhesive matter; and secondly, its power rapidly to remove, by an excitement of the absorbing system peculiar to itself, the newly effused adhesive matter. If these facts are admitted, then the propriety of its use is indicated in iritis, as in carditis, pleuritis, peritonitis, and the only practical question that can arise respecting it is how far the patient's strength is equal to support the remedy. There are, I admit, states of the organ as well as of the constitution in which it cannot be borne, and no sooner is its influence felt, than the inflammation threatens disorganization, and if the plan is persevered in, quickly runs on to it. The globe becomes enlarged or misshapen, the sclerotica assumes a livid hue, and the veins a state of varicose congestion; sometimes the eyeball suppurates, and the little remaining vision is completely extinguished. In cases where age, or the existence of other diseases, or the already excessive use of mercury, has greatly enfeebled the powers of the system, it must be used, if ventured upon at all, very sparingly, or with intermissions, and the system must be supported by every admissible means, both of nourishment and medicine, during its employment." 292.

12. *Amaurosis.*—This comprehends both functional and organic derangement of the *sentient* system of the eye, impeding vision. The symptomatology and pathology of amaurosis will be found in page 250 *et seq.* of our last number. The functional amaurosis is a very diversified class of disease, and being the effect of some morbid action in the system at large, or some important organ, these last are the proper objects of medical treatment. Thus amaurosis from gastric disorders, plethora, irritation, &c. are remediable; whereas, that from paralysis, the sequel of fever or epilepsy, or severe constitutional disease, is a hopeless form of the malady.

The proper functional amaurosis, if treated at a very early period, is very often cured. The extreme of light or temperature, and the over-exertion of the organ are the chief causes, and the removal of these is obviously necessary to the cure.

"The removal of an irritating or oppressing cause will often effect a sudden and marked relief, as by clearing the intestinal canal of vitiated secretions therein accumulated, by restoring the digestive functions labouring under manifest derangement, or by taking away blood where the necessity is indicated. I have seen an incipient amaurosis distinctly arrested by the extraction of a diseased tooth, when the delay of a similar operation had occasioned gutta serena on the opposite side two years before." 299.

The treatment of amaurosis is almost exclusively constitutional; and our author wisely attaches no credit to the farrago of external remedies, as stimulant vapours, drops, ointments, and ethereal embrocations. Cupping and setons will be occasionally necessary, for very obvious reasons; and blisters will be found useful in almost every case. This last remedy should be frequently repeated, and alternately applied over the superciliary ridge, upon the temple, mastoid process, or nape of the neck, as may be judged most necessary. There is great difference of susceptibility under the action of blisters. Mr. Travers has known the irritation and discharge of an efficient one, not bigger than a crown, sink the powers of a delicate female for days, especially where the retina has been weak. Such cases are yet more affected by the direct loss of blood, even in the smallest quantity. Our author has not seen a single instance of benefit from electricity in this disease.

Mr. Travers very justly remarks that a strong and delusive similarity often prevails between the signs of diseases, resulting from conditions diametrically opposite. Thus the treatment in cases of general plethora and cerebral compression will be evidently depletive; whereas, in cases of undue determination of blood to the organ, very common after deep-seated chronic inflammation, or distress from over excitement, the vessels have lost their tone—an effect decidedly increased by depletion. Our author has never seen any benefit derived from antispasmodics, nor from the emetic practice, recommended by high authority.

"The cases of gastric disorder to which it is especially applicable are most benefited by a long continued course of the blue pill, with gentle saline purgative and tonic bitters." 304.

After the visceral functions are regulated, by blue pill, colocynth, rhubarb, or aloes, we are to exhibit general tonics, as the mineral acids, bark, steel, (when admissible,) and arsenic.

"When the amaurosis is recent and sudden, and either the signs of an obscure inflammation are present, or only the amplitude and inactivity of the pupil correspond to the patient's history, the indication is less simple; mercury should be introduced with all convenient rapidity into the system, I mean so as to ruffle it in the least possible

degree. No advantage is obtained by salivation, on the contrary, I think it hurtful; when mercury is beneficial its efficacy is perceived as soon as the mouth is sore. I have seen it tried, and have myself tried it in many cases of perfect amaurosis without the smallest advantage; but in cases of recent occurrence, imperfect, but rapidly progressive from bad to worse, I have been witness to its power in suddenly arresting the disease in too many instances, not to entertain a far higher opinion of it than of any other article of the materia medica." 305.

Entire repose of the organ is necessary, with the natural tonic, viz. a pure, dry air, the cold bath, horse-exercise, nutritious diet, early and sufficient rest, agreeable society. "These are of greater avail than drugs."

The 4th section of this chapter is on diseases of the eyeball. The treatment of injuries from external violence, falls under the head of inflammation, and need not be alluded to here. Neither shall we touch on the operation of extirpating the eyeball, but confine ourselves principally to what may be considered *medical surgery*, as all those who undertake the higher operations on such a delicate and important organ as the eye, will naturally possess themselves of the original work. The same reasons will induce us to pass over our author's section on artificial pupil entirely, and to touch on the extensive class of operations for cataract very lightly.

Mr. Travers remarks that it has been customary for oculists, where one eye has been affected with cataract, to advise the postponement of the operation till the other eye becomes dark. This he combats, because the cataractous eye is strongly disposed to become amaurotic on the supervention of accidental inflammation, besides the danger of the retina losing its vigour by the permanent exclusion of light.

"It would be incorrect to say that the operation was unadvisable in all cases of cataract in which the patient has no sense of light, for it is possible that the density of the lens may be such as absolutely to exclude the light, and that the motions of the iris may be therefore suspended, or from some degree of pressure of the lens, or adhesion of the uvea to the capsule, that the pupil may be undilated, and the circumference of the lens permanently covered. But undoubtedly a case of this description is unpromising. A strong sense of light by which at least to know the direction in which it enters the apartment —to be sensible of its falling on the eye, and of a shade, as the hand for example, intercepting it, with a corresponding freedom of motion in the pupil, is the most favourable state for the operation. There is in this case perception enough to determine the sensibility of the retina, and not enough to occasion the unsteadiness of the globe. If a patient has vision, the eye is irritable to light, and involuntarily

rolls as far as possible towards the nose on the introduction of the instrument, one of the greatest perplexities in the operation." 315.

Of couching, extraction, and absorption, the first and most ancient, is now seldom practised. It is only applicable to cataracts of firm consistence, and where there are serious impediments to the more eligible mode of extraction.

"The couching needle may be passed through the sclerotica at a line's breadth from the cornea, and a little below the horizontal diameter, so as to avoid the long ciliary artery; or through the inferior part of the cornea and pupil; and the lens may be depressed vertically or horizontally. The term 'reclination' has been applied to the latter method. In both cases the lens must be hitched into a breach of the vitreous humour below the border of the pupil. Its anterior capsule, and the capsule of the vitreous humour, must be divided or torn through, to render the operation effective. The lens corresponds in diameter to the iris, and there is therefore no natural space into which it can be depressed. The posterior capsule, identical with that of the vitreous humour, must be lacerated to admit of its dislocation backwards and downwards; and if its anterior capsule was left entire, it would become a secondary capsular cataract, and require a subsequent operation." 317.

The operation of couching through the cornea (keratonyxis) possesses, in our author's mind, no advantages over that through the sclerotica, the injurious consequences attending the perforation of the latter and choroid, being either imaginary or resulting from unskilful management.

"The real objection to couching is the ultimate step of the operation, viz. the breaking up of the fine texture that fills the globe by the forcible depression of the lens. Whether it be depressed edgeways or breadthways, makes no difference in the result; it must still occupy a breach in the cells of the vitreous humour, and must derange and disorder that delicate texture and those connected with it. A slow insidious inflammation marked by a gradual development of the symptoms of disorganization, viz. congestion of vessels, turbid humours, flaccid tunics, and palsied iris, is too often the consequence. The sight, instead of improving when the immediate effects of the injury are passed away, remains habitually weak and dim, or declines and fades altogether." 319.

Absorption is only to be attempted where the cataract is flocculent, the perfection of which operation consists in making the free central aperture by laceration of the anterior capsule the preliminary operation. The more minutely the lens is broken up and divided in its texture, and the more its fragments are dissipated in the anterior chamber, the quicker the progress of absorption: and the softer the texture of the lens, the more readily and safely is this object accomplished.

"I pass over the description of an operation which consists in the introduction of a knife, whether through the cornea or sclerotica, for the purpose of cutting up the hard crystalline *in sitû*, and throwing the slices into the anterior chamber; and I mention it only by way of caution, if caution be necessary, against a measure so desperate and ill advised." 320.

It is especially to the cataract of infancy, which is fluid or flocculent, that the operation of absorption is applicable. Here indeed there is no alternative, for its consistence does not admit of depression, and the eye is too unsteady to admit of extraction with safety.

"It is impossible to conceive a more simple, sufficient, or gratifying operation than that of Mr. Saunders, if the intention is perfectly executed. I have now enjoyed extensive opportunities of ascertaining its value; having operated, during a period of ten years, upon children of all ages from four months upwards, and I do not hesitate to affirm that it ranks in my estimation as one of the finest discoveries of modern science." 321.

But the operation of extraction is by far the most perfect ever devised for the cure of cataract. It is, however, difficult; the several modifications suggested at different times, owing their origin to the disappointments and defeats which operators have met with in learning to execute it with success. The Baron de Wenzel confessed that he "spoiled a hatful of eyes," before he had learned to extract. The main impediment to the success of the operation, Mr. Travers thinks, is—"a section of insufficient magnitude." The easy extraction of a cataract, like the easy extraction of a stone, almost invariably does well, and the difficult and forcible removal of either as certainly augurs unfavourably. The enlargement of the section, if too short, is difficult, and always dangerous to the iris in the collapsed state of the cornea. It is attended, moreover, with imminent risk of a laceration, from the want of due support, of the vitreous capsule, the loss of a portion of this humour, and the consequent sinking of the lens behind the iris. The free escape of the vitreous humour, from imperfect section, may embarrass the operator, and induce him to leave the cataract, in the hope of its absorption, or of removing it at a future time—an erroneous practice in Mr. Travers's opinion. "For as soon as the wound closes, the cataract is raised by the renewal of the aqueous humour, and pressed forward upon the iris." Our author has seen inflammation speedily supervene, in such cases, terminating in suppuration and destruction of the eye. It is a point of importance, our author thinks, that the section should not be carried so low as to verge upon the sclerotica, and thus leave the corneal margin of an insufficient breadth for union. Mr. Travers

prefers the section midway between the pupil and margin of the cornea.

Soft, semi-transparent, and unadhering capsular cataracts may all be conveniently extracted, as they pass through a smaller section, and the capsule is easily laid hold of with a hook or forceps.

In respect to instruments, every man must decide for himself. The knife of Professor Beer of Vienna is that which Mr. T. is in the habit of using. The preparative and after-treatment is of great consequence, in the issue of the operation. Purgatives and abstemious diet should precede; and if there be fulness of the vessels of the head, the patient may be cupped the day before operation. "It is a matter of some importance to examine the section, and adjust it accurately before finally closing the eye." A slight friction of the lids assists the pupil to recover its figure, and dissipates any small floating particle of lens. The sitting posture, in an easy chair, is most favourable after the operation, until the patient feels fatigued, and desires to go to bed. Confinement to the latter produces great restlessness. If the patient complains of pain on the evening of the day of operation, a full blood-letting removes it, and should not be omitted. Mr. T. never gives any opiates. A light bandage passed round the night-cap is sufficient covering for the eyes. Compresses are better omitted. For the inflammation that may succeed the operation, topical blood-letting and blisters are sometimes necessary; but a strict antiphlogistic regimen is always proper. "There is often an irritability to light, an aversion to open the eye, which is removed by two or three brisk doses of calomel."

"The inflammation of the iris, the interstitial ulceration and opacity of the cornea, the separation of the edges of the section by the intervention of another texture, the redundant deposit of lymph in the section, or the ulceration of its edges, are the mischiefs which occur after unfavourable extractions. Blood shed by a wound of the iris in the anterior chamber is quickly absorbed. Where it has even filled the entire chamber, I have found the aqueous humour clear on the succeeding day.

"The coalition of the iris and cornea adjoining the section is the result of a prolapsus or a lesion of the iris. The iritis may be vehement and proceed to amaurosis, or it may terminate favourably under the action of mercury, in constricted pupil. The dimnesss of the cornea, if any, is slight and transient, except an interstitial herpetic ulcerative action, connected with a bad condition of the edges of the section be present, when the cornea takes on an opacity of a very intractable kind. The sclerotica is in this case inflamed, and very minute depressions appear on the surface of the cornea, which undergoes a total loss of brilliancy, although it remains obscurely transparent. The restoration of smoothness to the surface does not dimi-

nish the lacklustre appearance of the membrane. The patient has a perception of light, but no vision of objects. In fact, the cornea precisely resembles that of the dead subject. Mercury is of uncertain efficacy in this case, which fortunately is very rare. Time and tonics do most for it." 331.

We shall pass over the important chapter on the various operations for artificial pupil, because we cannot give a satisfactory analysis of it, and because the work will be in the hands of all surgeons who practise such delicate operations on the eye. We shall therefore, in the remainder of this article, which must soon come to a close, advert only to minor points of ophthalmic surgery, as being more generally attended to by practitioners of all ranks. The last chapter is on diseases of the appendages of the eye.

Hordeolum.—This should be discharged with the point of a lancet, and poulticed or bathed with a slightly astringent wash. The redness of the tarsi, thickenings of the conjunctiva, and small cuticular denudations that result from frequent formations of stye should be treated with dilute nitrated ointment of mercury, and alum or zinc washes.

Lippitudo.—The acute form generally yields to a single stimulant application; but the chronic lippitudo is a very deforming disease, and often intractable.

"The vessels of the palpebral conjunctiva are turgid, and at length varicose, the membrane a little overlaps the thickened tarsal border; this is partially if not quite denuded of cilia, and small surfaces of the adjoining cutis are excoriated. The follicles are plugged, and here and there is one so much distended by inspissated mucus, as to occasion acute inflammation. These should be opened with the point of the lancet, and the white consolidated secretion removed, the conjunctiva should be occasionally scarified, and the meibomian borders stimulated by one of the ointments above-named. The tarsal edges should also be frequently bathed with an astringent lotion. In the aggravated and obstinate cases of lippitudo, where the conjunctiva is altered in its texture, the sulphate of copper lightly carried over the thickened conjunctiva and ulcerated border of the tarsus, is highly useful; and stimulant solutions of copper, zinc, lunar caustic, or sublimate, applied by a camel-hair brush to the tarsal edges before smearing them with the ointment, are likewise advantageous." 352.

At the risk of being accused of heterodoxy, Mr. Travers asserts that the "golden ointment" is an excellent remedy, and "that the inventor of this arcanum deserves well of his country." The great evil, of course, consists in the *abuse* of quack, as of other medicines.

Inchiasis.—When the cilia are inverted from a diseased

growth, they must be kept plucked until, by the improved condition of the hair gland, the disease is removed.

Entropion.—The inverted eyelid has been treated successfully on the plan recommended by Scarpa, in nine cases out of ten—that is, by the removal of a fold of skin with a pair of scissors from the surface of the eyelid.

Ectropeon.—The ordinary ectropeon is cured by the excision of a portion of the thickened or redundant conjunctiva which occasions it.

Obstruction of the Lacrymal Passages.—Notwithstanding all that has been written by eminent surgeons, the practice in this class of diseases, is unsettled and unsatisfactory.

"In proof of this remark, I may observe that nearly all the schemes hitherto suggested have been executed within my knowledge by different surgeons, viz. the small probe and injecting syringe of Anel, the sound and syringe for the nasal duct, the seton of silk or catgut, the bougie or nail-headed style, the metallic tube, &c. In Paris, M. Dubois employs the silk seton of Mejan, M. Dupuytren the permanent tube of Wathen, M. Roux the mesh seton introduced by means of a watch-spring from the sac. M. Beer, of Vienna, uses, for a seton, a coil of catgut, such as is used for fiddle-strings. Among the surgeons of this town, Mr. Ware's style is chiefly in use, although the practice is evidently losing credit." 359.

Mr. Travers thinks that the effect of a severe cold in the head, producing a coryza and a troublesome watering of the eye, may enable us to form a pretty accurate idea of the cause of a permanent stillicidium. A state of vascular congestion and intumescence, if long continued, may lead to permanent thickening of the membrane lining the duct, and thus occasion a stricture of its calibre. An adhesive process, whether primary or consecutive to the states of suppuration and ulceration, finally closes the duct, and renders it impervious. "The obliteration of the canal by a degeneration of the membrane into a texture resembling cartilage, is a secondary morbid change, and only the result of long continued obstruction." Abscess, though often the consequence of obstruction in the duct, may take place totally independent of obstruction, though causing a temporary one. A free opening of the sac, for the purpose of discharging its contents, shortens the sufferings of the patient, and saves the skin; but unless previous symptoms demonstrate stricture, the abscess does not warrant the employment of any farther measures.

Mr. Travers's practice, in cases of lacrymal obstruction, is simply the passing a moderate sized probe into the nose, after

the incision of the sac, and then reducing the inflammation of the parts.

"A set of silver probes, of about five inches long, varying in size, flattened at one end, and slightly bulbous at the point, are the instruments I use for the purpose of restoring the passage. The probe is introduced with perfect facility by one who is familiarly acquainted with the anatomy of the part, from either of the puncta lacrymalia, into the corresponding nostril, where no obstruction is offered to its passage. If the punctum be constricted, it is readily entered and dilated by a common pin; and upon withdrawing it, by one of the smaller probes: the direction and relative situation of the lacrymal ducts, the sac, and the nasal canal, point out the proper course of the instrument. It is confirmed by its advance without the employment of force, and the sensation conveyed by the free and unencumbered motion of its point; until the point is fairly within the sac, it is necessary to keep the eyelid gently stretched and slightly everted; the upper lid being drawn a little upward toward the brow, the lower as much downward toward the zygoma. The point carried home to the sac and touching lightly its nasal side, the lids may be left at liberty, while a half circular motion is performed by the instrument; the surgeon neither suffering the point to recede, or on the other hand, allowing it to become entangled in the membrane."

"The probe now rests in a perpendicular direction upon the eyebrow towards its inner angle, and in this direction it is to be gently depressed until it strikes upon the floor of the nostril, where its presence is readily ascertained by a common probe, passed beneath the inferior turbinated bone. The probe of smallest dimensions is of sufficient firmness to preserve its figure in its passage through the healthy duct, but it is too flexible to oppose any considerable obstruction, without danger of a change of figure; for the stricture of the lacrymal ducts it is of sufficient strength." 374.

By several repetitions of the operation, the passage is generally rendered permanent; but should this not be the case, Mr. T. introduces a style having a small flat head, a little sloped, through the punctum lacrymale into the nose, and leaves it for twenty-four hours in the duct. If worn longer, it ulcerates the orifice. A day or two should be suffered to elapse before the style is again introduced, and it should then be passed through the other lacrymal duct. The introduction of tepid water should be made on the intermediate days, by means of Anel's syringe.

We have now, we hope, exhibited as full and comprehensive a view of Mr. Travers's work, as could well be effected within the limits which the article has occupied. The apparently continuous chain of the narrative, may induce a supposition that little art or labour was necessary in the construction of the analysis. Let those who think so, try to imitate it, and they will then feel the difficulty. Mr. Travers's work is so pregnant with sterling information, that we often found it a hard task to

compress valuable matter within less bounds than those which it occupied in the original—a rare circumstance in modern publications!

In every part of Mr. Travers's work, there is such forcible indication of good sense and sound judgment, that our assent to his propositions is almost irresistibly secured—and that, apparently without the least effort on his part. Such powers are the lot of few; and we sincerely wish that the excellent author may long enjoy them, for the good of humanity, and the honour of the profession.

The plates are executed in the very best style.

Remarks on the Epidemic Yellow Fever which has appeared at Intervals on the South Coast of Spain, since the year 1800. By Robert Jackson, M. D. London, 1821.

(From the London Medical Repository, for January, 1822.)

The contagious nature of yellow fever, and the supposition that it is capable of being transported from one remote climate to another, are subjects which have not ceased to divide medical opinions during the last thirty years. Before that period, the affirmative of both these propositions was generally adopted; and until 1793 and 4, the evidence necessary to such a belief, was never inquired into. The overwhelming epidemic, which ravaged intertropical America and the United States during these and subsequent years, drew the attention of several enlightened individuals to a closer examination of the subject than had heretofore been entertained. Since that time, the various epidemics that have visited different parts of the globe, have been accounted for, upon opposite principles, by the numerous writers who have observed their progress; and, notwithstanding the volumes of description and of controversy which have been the result, the opinions of the profession are still unsettled respecting the nature of the disease. It may be reasonably inquired, what are the causes which have so long retarded our knowledge respecting so important a subject? These, it may be presumed, are in many respects the same with those which always stand in the way of our advancement in every other branch of human knowledge. The subject presents also difficulties, which are, perhaps peculiar to itself; and not a few of our sources of error are attributable to the majority of those writers, who have either furnished us with information, or who have entered the lists of controversy. There are, perhaps, not many of the numerous disputants, on either side of the question, who deserve at the present day to be quoted as authorities, upon

which a just idea of the disease may be founded. The majority of them entered upon the inquiry with their judgments previously biassed. Others possessed neither that degree of scientific education, nor sufficient talent for medical observation, necessary to view the connexion existing between the soil, situation, climate, and meteorological vicissitudes of a country, and the diseases which are their result. Some drew conclusions of too general a character, from a comparatively narrow field of observation: and nearly all erred, in some degree, by considering the disorder in too isolated a manner,—without viewing it in connexion with apparent causes, and with the diseases which have existed previously and subsequently to its epidemic prevalence. It must not, however, be forgotten, that occasionally there appeared in the arena individuals whose opinions will always obtain respect; who added to their scientifical and medical reputation by the discussion, and who evinced, by the honourable spirit and temperate zeal which they manifested, that truth was the sole object of their inquiry. From among this respected number, we cannot deny ourselves the pleasure of particularizing the names of Blane, Jackson, Devéze, Fergusson, Rush, and Tommasini,—names which will always hold an eminence in the history of medical science.

We regret that the epidemical visitations of fever, which, at irregular intervals, have visited the intertropical parts of America, the United States, and the south of Spain, have not been always watched during their rise, progress, and decline, by individuals fully qualified for the undertaking; and that the subject has been so seldom viewed from the "elevated table land of human science," from which may be observed, according to the present state of our knowledge, the physical changes that take place on the surface of our globe, and the laws which regulate the animal economy. A survey so comprehensive would lead us to recognise the causes which produce unusual mortality among the human species, or among the lower animals, in the changes that take place in the constitution of the fluid and of the surface, in and upon which we enjoy a common existence. To such a source, even uncivilized countries ascribe epidemic disorders; and it is only owing to the weight of authority,—to the prevalence of preconceived opinion, of false theory, and of premature generalization,—that we have so long strayed from so obvious and natural an explanation; our very progress in civilization has retarded the advancement of our knowledge upon this subject.

The indubitable and acknowledged operation of a contagious virus in perpetuating other diseases, led many to account for the extension of this upon a similar principle. It afforded them an easy solution of many difficulties which stood in the way of

other explanations: and hence its influence became as firmly believed in, as Tertullian did in the power of the devil to produce similar diseases: "Inducere potest morbos et sanitates. Viscerum actiones potest inhibere latenter, et venenis nobis ignotis corpus inficere." The circumstances connected with an epidemical or infected state of the atmosphere, were generally such as to preserve the illusion, and to furnish plausible arguments in behalf of its contagious property, to those who did not look narrowly into the matter.

The subject itself presented, also, many sources of error. The difficulties inseparable from its full consideration were not entirely on one side of the question; the disease possessed so many characters,—some of them of a nature so opposite and so mutable, according as it was met with in an epidemic or endemic form, as it arose from causes of greater or less intensity or complication, and as it was witnessed within or without the tropics, or in the eastern or western hemisphere. These circumstances, with the accidental occurrence of a crowded population,—a confined and frequently breathed atmosphere,—foul air arising from the ill-ventilated apartments of the sick,—and from other sources of impurity, whether proceeding from the soil, or from any other cause,—and the varying disposition of the subjects who become exposed to these influences,—could not fail, severally or combined, to furnish plausible arguments to either side of the controversy.

Another source of error and of difficulty respecting a knowledge of the etiology of yellow fever, arose from the situation in which those were placed who described its phenomena. There were few from among the numerous writers upon the subject, who derived their knowledge from personal observation in both hemispheres. The experience of many was confined to its appearance in one country, and during the prevalence of a single epidemy. Others observed only the endemic form of the disease. Their opinions, therefore, respecting its laws, being founded upon observations made during opportunities comparatively limited, although deserving of weight, inasmuch as they furnish materials from which a more general knowledge and more correct inferences may be drawn, yet cannot be considered singly to possess sufficient authority towards the positive decision of the question, so long the subject of dispute.

In order that our readers may have the subject placed fairly before them, we subjoin a catalogue of the most approved authors who have written upon the subject of yellow fever, from personal experience, within the last thirty years; arranged according to their opinions respecting its contagious or non-contagious qualities, and specifying the countries in which they

derived their experience.* The enumeration is necessarily imperfect, from our confined means of ascertaining the opinions

* Class I.—Authors who consider Yellow Fever an imported and contagious disease:—

Arejula (Joh. Eman.), Darstellung des Ansteckenden Gelben Fiebers, in Malaga. Wien, 1804. (In Spain.)

Bally (M.), sur le Typhus Amérique, ou Fièvre Jaune. Paris. (In America.)

Batt (William), Alcuni Detagli sulla Febre Gialla Contagiosa. Geneva, 1804. (In Spain.)

Berthé (J. N.), Précis Historique de la Maladie qui a régné dans l'Andalousie, en 1800, &c. Mont. 1802. (In Spain.)

B. Progetto, sull' Origine, Natura, e Carattere della Peste, dei Contagi, e della Febbre Gialle. Lucca, 1804. (In Spain.)

Blane (Sir Gilbert). See the various writings of this very experienced physician. (In West Indies.)

Caizerques, Mémoires sur la Contagion de la Fièvre Jaune. (America.)

Chisholm (Charles), Essay on the Malignant Pestilential Fever, &c. London, 1801. (In West Indies.)

Currie (William), Treatise on the Synochus Icteroides, &c. Philadelphia, 1795. (In United States.)

Dalmas, Récherches Historiques et Médicales sur la Fièvre Jaune. Paris, 1805. (In Spain.)

Des Portes, Histoire des Maladies de St. Domingue. (In West Indies.)

D'Oyarvide, de lo Vomito Negro. Havan. 1801. (West Indies.)

Fellowes (Sir J.), on the Pestilential Disorder of Andalusia. Lond. (In Spain.)

Lind, on Hot Climates. (In West Indies and Africa.)

Moreau de Jonnés, Monographie sur la Fièvre Jaune. Paris, 1820. (In Spain.)

Pym (William), Observations on Bulam Fever, &c. (In Spain.)

Reid, Diseases of the Army, &c. (America.)

Salgado (J. D.), Refleciones acerca de la Epidemia que regna en Cadiz, &c. Mad. 1800. (In Spain.)

Class II.—Authors who consider Yellow Fever to be entirely local in its origin, non-contagious, and to depend upon an epidemic constitution of the atmosphere, when it assumes its more malignant and devastating characters: in short, to be essentially a non-contagious disease:—

Amiel. (In Spain.)

Bancroft, on Yellow Fever. (In West Indies.)

Barker. In American Medical Repository, Vol. VI. (In United States.)

Browne (Sam.), Treatise on the Yellow Fever, &c. Boston, 1798. (In United States.)

Burnett, on Mediterranean Fever.

Cassan. In Journal Général de Médecine, p. 221, t. xxi.

Comstock. In New York Medical Repository, Vol. VI., No. 11, Art. 2. (In United States.)

Clarke (James,) Treatise on the Yellow Fever, as it appeared in the Island of Dominica, in the years 1793–96. Lond. 1797. (In West Indies.)

Davidge (J. B.), Treatise on the Autumnal Endemial Epidemic, &c. Balt. 1798. (In United States.)

Devéze (J.), Traité de la Fièvre Jaune. Paris, 1820. (In West Indies and United States.)

Dickson. In the 13th Vol of Edinburgh Medical Journal. (In West Indies.)

Doughty, on the Nature and Treatment of Yellow Fever. (In Spain.)

Gilbert (N. P.), Histoire Médicale de l'Armée Française à St. Domingue. Paris, 1803. (In West Indies.)

Hillary, on the Diseases of Barbadoes.

Hunter (J.), Observations on the Diseases of the Army in Jamaica.

of others who have also written upon this fertile subject. It may be collected from this list, that the numerical strength of the non-contagionists who have observed the disease in the western hemisphere is greatly superior to their opponents, especially as it regards America; whilst, on the other hand, the contagionists are most numerous amongst those who have derived their experience of the disorder in Spain.

There is one circumstance connected with the epidemic occurrences of the disease, which comparatively few writers upon the subject have sufficiently insisted upon. This relates to the prevalence of the epidemic influence, and its limitation to dis-

Jackson (Robert). See the various writings of this truly eminent physician. (In West Indies and Spain.)
Jefferson. (In United States.)
Keutsch. In Nordischem Archiv. IV. B. 2. St. p. 83.
Lacoste, sur la Fièvre regnante en Livorno. Liv. 1805. (In Spain.)
Langermann (J. G.). Uber das Fieber, &c. Hof. 1805.
M'Arthur. In Dr. Johnson's Work on the Diseases of Tropical Climates. (In West Indies.)
M'Lean, on Pestilential Diseases.
Miller (Edward), Report on the Malignant Disease of New York. 1805.
Moore, on the Domestic Origin of the Pestilential Sickness at Baltimore. 1800 (In United States.)
Mosely, on the Diseases of Tropical Climates. (In West Indies.)
Musgrave. In Medico-Chirurgical Transactions, Vol. IX. (In West Indies.)
O'Halloran, on the Fever at Cadiz, &c. Lond. 1821.
Ramsay, Facts, concerning the Yellow Fever at Charleston. 1800.
Robertson (Arch.) Observations on the Fever, &c. of New Orleans. In Dr. Johnson's Work, 2d Edit.
Rush (Benj.). See the Papers published upon the subject by this Physician, in the Transactions of various learned Societies. (In United States.)
Savarési (A. M.), sur la Fièvre Jaune en Générale, &c. (In West Indies.)
Selden. New York Medical Repository, Vol. IV. N. 4.
Trotter, Medicina Nautica, &c. (InWest Indies.)
Valentin (Louis), Traité de la Fièvre Jaune. Paris, 1803. (In America.)
Whitehead. In American Medical Repository, Vol. IV. Num. 4. (In United States.)
Winterbottom's Account of Sierra Leone. (In Africa.)
Writer in Journal of Foreign Medicine, No. VIII. (In Africa.)
And Drs. Fergusson, Muttlebury, Denmark, Veitch, Vance, and Sheppard, are of the same opinion. (In West Indies.)

Class III.—Authors who consider Yellow Fever local or indigenous in its origin, but capable of assuming a contagious character, under certain favourable circumstances:—
Eymann, de Typho Icterode Ind. Occident. Zeitung. 1801.
Hosack (Alex.), on the Yellow Fever of New York. 1797.
Humboldt, Essais Politiques sur le Mexique. Journal Général de Médecine, 1811.
Johnson (J.), on Tropical Climates. Lond. 1821. (In East Indies.)
Le Blond (T. B.), Observations sur la Fièvre Jaune. Paris, 1805.
Nicol, on the Fevers of Seringapatam. (In East Indies.)
Palloni, Observations Médicales sur la Fièvre Jaune régnante en Livorne. 1800. (In Spain.)
Pugnet, Mémoires sur les Fièvres de Mauvais Caractère, &c. Lyon, 1804. (Mediterranean and West Indies.)
Romans, Natural History of Florida.

tricts adjoining the sea coast. If the disorder be the result of actual contagion, to what is it owing, that it is not propagated to inland countries which enjoy the requisite temperature? Why is the epidemic form of the disease never seen inland within the tropics? To what circumstance can the contagionists impute the immunity of districts in the vicinity of the towns in which the disease raged during the American epidemics, between which there existed no cordon, nor other means for preventing free communication? These measures Dr. Jackson has shown, in the present work, to be lax in the extreme, as they are or have been resorted to in Spain; and yet the disease has never made its appearance in the central provinces of that kingdom. Those who argue for the influence of changes in the surface, and in the fluid which maintains our existence, consider that the results to which they give rise, ought to be expected in situations which favour their generation, and under circumstances which give rise to their concentration. Although the present state of our knowledge can convey us but a short distance towards obtaining a knowledge of the nature and extent of these physical vicissitudes, yet when stated effects, upon the animal economy, follow certain changes from the usual succession of phenomena which obtains in any particular climate, or situation, it surely cannot be an unfair inference to consider their connexion in the relation of cause and effect. These changes are not always cognizable; they generally, however, present characters by which their presence may be inferred.

Yellow fever is always endemic in intertropical climates; but it never appears as such in temperate countries, unless during the warm months of summer and autumn, amongst susceptible individuals. It would appear, from taking a view of the *locale* of the disease, as it has been observed in both hemispheres, that a certain degree of cultivation of the surrounding soil, although tending in a very great degree to diminish the endemic disorder,—yet, will render the situation more obnoxious to the epidemic influence. Intertropical Africa, which is completely uncultivated, and thickly wooded towards the sea coast, has never experienced the epidemic form of the disease, although its endemic type is present in its most concentrated character: and, as has been noticed by Dr. Rush and others, until cultivation had made a considerable progress, both in the West Indies and on the American continent, epidemical yellow fever was unknown, although the endemical disorder was prevalent. Our limits will not admit us to go farther into the explanation of this interesting subject, than to repeat the opinion which we have elsewhere held, that a cultivated, exposed, rich, and absorbent soil, may, from the direct influence of the sun's rays, have its more volatile elements set free, which, accumulating

in a moist, hot, and stagnant atmosphere, may generate a disease more formidable than that resulting from the most concentrated degree of marsh miasm in a tropical climate. May not also the state of the electrical fluid, as it exists in the air, or as it is evolved from or received into the earth's surface, together with the more subtile elements of the soil and of organized remains, which, under ordinary circumstances, are expended in vegetable nutrition, perform their share in producing these noxious effects upon animal life, from which the lower animals are not always exempt?

Dr. Jackson deserves the gratitude of his profession, and of the human race, for his strenuous endeavours, on so many occasions, to advance medical science, and to alleviate the sufferings of his species. And we assert, that he has succeeded to a greater extent in accomplishing objects so truly good and great, than any one who has gone before him. The obligations which he has formerly conferred upon his brethren, by his excellent views on the nature and treatment of fever, &c. have been long acknowledged, and will be always valued, as the result of a powerful and an inquiring mind, in a field affording a greater extent and variety of information, than has fallen under the experience of any other individual. From an ardent desire after knowledge, which appears to have increased with his years, he was induced to proceed to Cadiz during the epidemic of 1819, to inquire into its nature and cause. The writer of this review likewise made an offer of his services for the same purpose, and about the same time. The selection that was made, sufficiently evinces the desire which the distinguished individual at the head of the medical department of the army entertained for requisite information upon a subject of such general interest. The full and graphical description of the disease with which Dr. Jackson has furnished us, we will now endeavour to analyze in as condensed a manner as possible. The powers of mind evinced in the work, appear equal to the enterprise, which led him, at his advanced period of life, to inquire into its nature, with views so perfectly disinterested as he was personally concerned, and with motives so benevolent towards mankind.

Dr. Jackson enters upon his subject, by giving a sketch of the medical topography of Cadiz and its environs.

"The extensive level plains of Andalusia, which furnish pasture for horses, cattle, or flocks of sheep, as not drained by art, are nearly in a state of bog in the rainy season. Water penetrates deep into the soil; and, as there is little current or outlet, the absorbed rains continue to rise in vapour from an apparently dry surface during the great heats of summer. The people who live upon the plains, or on eminences near the plains, are consequently much harassed by

agues. The type varies from the regular tertian and quartan to a distinct remittent form; and sometimes it sinks into obscure remittent or gastric. From gastric there is an easy transition to continued or contagious typhus; and sometimes, under epidemic influences, a form of disease, not unlike that which has obtained the name of yellow fever, rages like a pestilence." p. 2.

The city of Cadiz, "although crowded with population, rarely, if ever, presents any thing that is offensive to the eye, or that can be supposed to be noxious to health."

Dr. J., after remarking upon the situation of the neighbouring towns, comes to the following conclusion respecting the presumed effects, which the soil and locality of this part of the country may produce upon its diseases:—

"It is, however, evident from this statement, superficial as it is, that intermittent and remittent fever, more or less complicated and dangerous according to circumstances, may be expected to be the prevailing form of malady of the whole of the environs of the bay. Near the sea coast, particularly in the autumnal season, the more prevailing form is presumptively that which is not improperly termed gastric, easily convertible into yellow fever, under the occurrence of one of those unappreciable epidemic influences, which arise at certain intervals, and for a time pervade, like a pestilence, certain districts of the earth." p. 6.

The next chapter of this work is one of great importance, both as it relates to the etiology of the disease, and as it affects the principles upon which the legislative enactments respecting it have been framed, in this and other countries. It treats of the "*supposed introduction of yellow fever into the sea-ports of the south of Spain, with some account of its propagation by land, extracted from the most creditable of the Spanish medical writers, confirmed or refuted by the evidence of respectable persons who observed the facts, and, to a certain extent, by the author's observations on the spot.*"—This is the grand subject of dispute, and the question which Dr. Jackson proposed to himself to answer, by a personal examination of authorities upon the spot. It cannot be expected of us to enter fully into the various bearings of the question, as they are viewed and discussed by this indefatigable inquirer; but we shall endeavour to present to our readers an abstract of the evidence and arguments which he has brought forward. Dr. Jackson observes, that

"The importation of the disease called yellow fever to the West Indies from Asia or Africa, and its exportation from the West Indies to the sea ports of the south of Spain, although not proved, is still credited by a number of medical writers of different nations, by the mass of the people of Spain, by the official authorities who are appointed to preside over the health concerns of that kingdom, and even

by the authorities of those European states which have commercial connexion with places where the disease prevails."

Such being the general state of public belief, Dr. J. considers, that it would be evidently to the benefit of the community to have the subject impartially and fully inquired into. He sets out in this inquiry by stating the prevailing opinion among medical men, who have resided for any considerable time in the West Indies.

"There is not," he says, "one practitioner in one hundred, who has resided for years in the West Indies, who believes that the concentrated endemic of that country, usually called the yellow fever, is a disease which possesses the power of propagating itself from person to person within the tropics."

Now, many of the contagionists will, in part, agree to this proposition; for they admit the non-contagious character of endemic yellow fever, and merely contend that the pestilential species possesses a contagious quality. Such is the opinion of Sir Gilbert Blane, Humboldt, Bally, and Palloni, and several others, as may be seen from the catalogue of authors, which is appended to this article. Sir G. Blane states,* "There is not the least suspicion in any rational mind, that the endemic and sporadic species are contagious. This is only alleged with regard to the pestilential or typhus species."

By pestilential, this excellent writer wishes "only to express a very high degree of prevalence, together with an extraordinary and calamitous rate of mortality." It is much to be regretted, that other authors have not been equally precise in the meaning and restrictions which they have assigned to their terms; and it is mainly to be attributed to such deficiency, that the ideas of the Profession at large are so unsettled and vague upon the subject. The majority of the contagionists assert the existence of two species of the disease: the one sporadic, or endemic; the other epidemic, pestilential, and contagious. The non-contagionists consider yellow fever, under either form, as essentially the same in kind; and only capable of being heightened in degree, under peculiar circumstances of the soil and situation, and from the state of the atmosphere during its continuance. The intensity and combination of these causes, they view to be sufficient to account for the phenomena observed in every occurrence of the epidemical variety of the disease, without calling in aid the operation of contagion, of which they can see no evidence, and against which they can urge strong proofs. As the contagionists themselves admit the non-contagious quality of the endemic or sporadic species of fever, which occurs in a warm climate, or in a temperate one, during a high state of

* Elements of Medical Logic, 2d Edit. p. 228.

atmospheric warmth, and which usually assumes the characters belonging to yellow fever, the question which remains to be answered is reduced to this:—Can it be satisfactorily shown, that the epidemical variety of this disease is the result of contagion?—is it propagated by means of such a cause; or, are the pestilential results, witnessed on so many occasions, produced solely by atmospheric influence, in conjunction with other causes, giving rise to malaria of a most noxious quality?—To the latter inference Dr. Jackson firmly adheres; we shall proceed in giving the abstract of his arguments upon the subject.

"Ships leave the West Indies, not unfrequently, with a numerous list of persons ill of the disease called yellow fever. The number of sick increases alarmingly on some occasions at the early part of the voyage; there is not, it is believed, one authenticated instance where the original has reached any sea-port in Great Britain, or even, perhaps, any sea-port in the south of Spain, in genuine form."

He afterwards proceeds to state what may occur under peculiar circumstances.

"It is necessary to mention what may be:—If a vessel, for instance, should happen to have a great number of persons ill of the yellow fever in its passage from the West Indies, it is possible, and even probable, that, by throwing these persons together in the mass in ill-ventilated apartments, (as the 'tween decks of a ship, even of a ship of war, must necessarily be,) the contagion, which belongs to an atmosphere corrupted by accumulation of living subjects in narrow space, can scarcely fail to be generated: a contagious fever will thus be produced, and carried to whatever port the vessel may be destined to go. This is within the circle of possibility; and it has, probably, sometimes occurred. The imported fever is contagious; but it is not the yellow fever, though the yellow fever may be the source from whence it originally springs." p. 9.

In this opinion we entirely agree with Dr. Jackson; we are, however, convinced, that this contingency but seldom takes place. Several instances have fallen under our observation, of the occurrence of the disease under circumstances of such a description, without being followed by the result which Dr. J. infers. It is certainly more frequently observed in low degrees of atmospheric temperature, than in the higher range, which is indispensable to the generation and continuance of yellow fever. Dr. J. next discusses the opinions connected with the appearance and diffusion of the epidemic which made its appearance at Cadiz, in the month of August, 1820, to obtain a knowledge of which, was the object of his leaving this country. He expressly states, that

"No vessel had arrived from a foreign port near that period, to which its importation could be assigned; consequently, those who be-

lieved in the opinion of importation from a distant country, were silent. A similar disease appeared at Xerez de la Frontera, somewhat earlier. Xerez is not a sea-port, and has no direct communication with the sea, or with shipping. It is not known, not even conjectured, in what manner the fever was introduced into Cadiz; nor can it be distinctly proved in what manner it was brought to Xerez."

Our author proceeds in his examination of the subject, as it is connected with the epidemic of that year; and, in our opinion, his statement is conclusive against the idea of imported contagion. He next examines the evidence which has been brought forward in favour of this agent, during the fevers which have prevailed in Spain, from 1800 up to the time in which he visited that country. This part of his subject is treated at considerable length. He refutes many of the current opinions respecting the mode of importation and propagation, which were conceived to have taken place at the time of their appearance; and then alludes to the apparent good result of seclusion, as it effects the dissemination of the disease. This he considers imposing, but at the same time deceptive, inasmuch as the result, which is only observed on some occasions, can be with more justice viewed as consecutive to some other obvious influence. He afterwards insists upon the failure of seclusion. Upon this point, we will allow the Doctor to speak for himself:

"The cordons, quarantines, and seclusions, here adverted to, have been applied to considerable bodies of military subjects, or civil population; and materials have thus been furnished for general inference, on a comparatively large scale. The common belief of the contagious nature of the yellow fever, induced multitudes of individuals to seclude themselves from intercourse with the community during the prevalence of this disease. The seclusion was of the most rigid kind in numerous instances, the provisions being supplied with similar circumspection as in the time of actual plague; yet, the persons thus secluded, are said, by those who would have been willing to have said otherwise, to have sickened and died nearly in the same proportion as those who walked the streets. Seclusion thus appears to have failed, strictly considered as seclusion. If the failures had occurred only now and then, it would not have been necessary to notice them; but they have happened so often, as to prove unequivocally, to the conviction of those who are not obstinately prepossessed against conviction, that the disease has another source besides that of personal contagion." p. 38.

Dr. Jackson next adverts to the effects produced upon those confined by the disease, in crowded and ill-ventilated apartments, and furnishes instances of greater mortality arising from this cause; while, on the contrary, elevated and airy situations, unattended with the aggregation of numbers of men into a limited space, have the result of rendering the disease more mild, and

of limiting the rate of its fatal influence. After detailing instances directly in disproof of personal contagion, he afterwards states in a more precise manner, his opinions regarding the influence of an infected state of the atmosphere, as generally diffused over the district suffering from disease; and as it is heightened in its pestilential influence from the addition of a noxious effluvia, or from the abstraction of some constituent necessary to the continuance of the function of animal life. The epidemical influence of the air, which he considers the source of the disease, may be rendered more intense in its operation upon the animal economy in some situations than in others. His observations upon this point are, in our opinion, very just; and we consider them to obtain to a very great extent, in most fevers, and in all climates, whether the disorder is personally contagious, or only the result of atmospherical vicissitudes. Such an influence may affect the energies of life to a certain extent; but not sufficiently to give rise to actual fever. At such a season, an individual may be farther exposed to the effects of an atmosphere rendered more impure by the aggregation of the sick, or from the want of ventilation, or from any other cause which has a tendency to depress the vital energy of the system; under such circumstances, fever will make its appearance; whereas, had the individual enjoyed a pure air, after being exposed to the epidemic influence, no actual disorder might have manifested itself. Thus, an epidemic air may be farther infected, by crowding together the diseased, so as to make an impression upon the system, generative of fever; and the prevalence of actual contagion, by this means, may be completely simulated.

We give the author's opinion upon this subject in his own words:—

"The general atmosphere of an epidemic circle is charged with a material of unknown quality, distinctly offensive to health and animal life. The epidemic influence is general throughout a given district, more concentrated at some points of the district than others, from causes totally unknown to us, or only partially known. The atmosphere in the apartments of the epidemic sick, particularly if these apartments be crowded and ill ventilated, may be supposed to be charged with this offensive material in a comparatively higher proportion than the common atmosphere, inasmuch as it has there less opportunity of being diffused. That, however, is only supposition; the following is fact. Persons of every habit, but more especially persons of susceptible habit, who enter into the apartments of those who are ill of the epidemic fever, rarely fail to experience unpleasant sensations at stomach, viz. distension and irksomeness; not unfrequently uneasiness in the bowels; suspension, or change in the natural functions; headach, heat, pain of the eyes, thirst, white tongue, disturbed sleep, and dreaming, amounting to reverie. These beginnings

of the morbid act are local; and, as such, they are for the most part removable by the prompt application of remedies that act locally; that is, by emetics, purgatives, or others, which produce decided changes in the secreting surfaces of the alimentary canal. It is presumptively by means of these remedies that Mr. O'Halloran, who in a manner domesticated with the sick at Xerez, warded off the attacks of formal fever. He was almost constantly under a greater or less degree of indisposition; and I was indisposed myself on various occasions, never in health, though my visits to the sick were desultory, and comparatively few. It is not said, that the impressions, which produced indisposition on these occasions, were impressions from the cause of yellow fever; it is evident that the general atmosphere was epidemic; and it was probable that the atmosphere of the sick ward was so in a higher degree than elsewhere; or, if not so, that the diseased act was there suffered to explode with more facility, in consequence of the diminished coercive energy of the atmosphere which filled the sick apartments." p. 49.

Dr. Jackson sums up his observations upon this very important subject, and next concludes this chapter with the following corollary:—

"The author has endeavoured, in the preceding pages, to trace the history of the yellow fever with care, and to bring the principal points which lead to important inferences to a narrow compass. He went into the investigation without prepossession; and he has gone through, in so far as he has gone, without bias for or against the contending opinions which agitate the medical world. He speaks what appears to himself to be the fact; and he thinks that he is warranted to say, from what he has seen, that the disease was not imported into Spain from a foreign country, in the year 1820; that it is not contagious in the proper sense of the word, that is, inherently contagious; that it does not exist, at least spread, except in epidemic atmospheres; and that one attack is not, as commonly believed, an absolute security against another. The evidences on which these conclusions are formed seem to the writer decisive of the fact. If they should be thought otherwise, they are at least so imposing on common understandings, as to be entitled to demand from the authorities of the state a scientific investigation of circumstances, with a view to ascertain where the truth lies: the knowledge of it is peculiarly important to the public." p. 51.

The next chapter of our author's work treats of the name, nature, and diagnostic of the disease. He gives a general view of the operations of epidemic influence, of the effects which it produces, and of the manner in which it pursues its devastating course. The contingent modifications arising from "dry and parching winds, vicissitudes of heat, rain, or absence of rain," are next adverted to. These are not considered of sufficient power to account for epidemic diseases, through their operation alone, although they may possess a certain degree of influence.

Their more probable source, he considers to arise from changes taking place in the surface of the earth itself. The influence of such derangements, as they may be supposed capable of generating epidemic yellow fever, is spoken of by the author as follows:—

"It is so far reasonable to suppose that it is the product of a temporary local derangement in the bowels of the earth, subversive of the order of movement among the materials which manufacture a healthy atmosphere. It is not presumed to say, whether it be from excess of what stimulates, or a defect of what maintains the salutary action of the system, that the morbid act arises: the first is positive of disease; the latter is negative of health. But, though there be doubt as to the actual nature of the cause, the act consequent to its impression has evidently some analogy with the effect of electrical influence, both in the manner in which it strikes the subject at first, and in the manner in which the disease produced by it proceeds to its termination. The epidemic aura is pestilential to human life: it is even said to be noxious to the life of other animals on many occasions, particularly to such as brood upon the earth; viz. rats, cats, and dogs; or to birds, which live in health only in the pure air of heaven." p. 58.

Dr. Jackson proceeds in the following pages to make some observations upon the nature and generation of a morbid material, according to the state of our knowledge respecting it, as it is subjected to our experience in contagious diseases. The phenomena which it exhibits are compared with what is frequently observed to take place from an infected state of the atmosphere, existing during epidemical yellow fever; and the sources of fallacy which give rise to the belief in the generation of a contagious material, are severally remarked upon. This very acute inquirer next passes on to the diagnostic symptoms of the disease in its act of formation. "These are not," he says, "capable of being distinctly portrayed by words." The appearance of the eye, and the general aspect of the countenance, are, however, minutely described, and in a manner sufficiently distinct. He characterizes them as "strongly indicating that an unknown cause has constricted, and in a manner, enchained the usual play of animal life." The *invasion* of the disease is frequently sudden; sometimes it is instant as a stroke of lightning. At other times, the animal powers are not suddenly overpowered by the form of action which the disorder assumes. "The first and most prominent act of the disease presents an appearance of general constriction throughout the whole of the capillary system. The sphere of action and reaction are circumscribed." The secretions are diminished, sometimes suspended, and the whole movements of the machine are compressed, as it were, into an artificial and contracted circle.

The fourth chapter of this work gives a history of the yellow

fever of the south of Spain, more expressly as it appeared at Cadiz and Xerez in the year 1820. This subject is introduced by the following propositions, which we consider very just; and, moreover, founded upon a most extensive acquaintance with the general phenomena of fever:—

"1. The movement which takes place in fevers which arise from causes which are strictly endemial, has a general tendency to expand and evolve outwardly; that is, to direct its course to cutaneous excretion, increased secretion from interior surfaces that have exterior outlets, or to increased vascular action, and consequent effusion or suppuration in organs that are without such provision. 2. The movement in fevers which arise from causes of acknowledged contagion, has an inherent tendency to the outer circle in like manner as the endemic; but it differs in this, that it engenders a process in the cutaneous expansions which multiplies a material, visible or invisible, similar to itself, and transportable by various intermediate substances to a distance from its source. 3. The movement in fevers which arise from causes that are adventitious or epidemic, or that are modified by epidemic influence, whatever be the real nature of the cause, has not in general a regular expanding evolution. The common febrile act is impeded; it is primarily and prominently constrictive of the functions of the capillary system; and it often remains constrictive throughout, assuming a withering or consuming process analogous to blight in plants, which terminates directly in death, or explodes on certain points of the system in form of gangrene, as if from sudden infliction of violence." p. 65.

Dr. Jackson afterwards gives us some general observations respecting the occurrence of the disease in both hemispheres, and remarks upon the relative characters which it assumes in the epidemics which he has witnessed in the West Indies and in Spain.

"It is not, unless as acted on by epidemic influence, a disease of an insidious nature in the West Indies. There it is more violent; but more open in its character, and as such, more under the command of medical treatment. The dangers are great, but they are obvious. The dangers in the fever of Andalusia were for the most part masked; the symptoms were little violent comparatively; but the process which leads to destruction was rapid, though silent—almost as rapid in its silence, as the other is in its violence." p. 68.

Dr. J. proceeds to give the history of the disease as manifested in the *sanguine temperament*. His descriptions and observations, both in this chapter and throughout the remainder of the work, are so condensed, yet full of the most useful matter, that it is by no means easy to give an abridged view of them to our readers. They also relate so closely to all violent forms of fever, that we can with confidence recommend the perusal of the work to those who wish to extend their knowledge by an

acquaintance with the phenomena which characterize one of the most violent disorders to which the human system can be liable. The various important relations which the disease possesses, in a civil point of view, and the materials which the consideration of its etiology, semiology, and its therapeia, will furnish to every reflecting mind in the profession, we consider of sufficient importance to justify the length of the analysis.

These forms of the yellow fever, in which vascular excitement is prominent, sometimes commence with a cold stage, followed by the usual symptoms of reaction. The invasion is frequently sudden, but not always. Headach is rarely absent, and often violent. There is a binding pain in the forehead and bottom of the eyes. The eye is hot, muddy, confused, and sometimes characterized by a peculiar glistening suffusion. The countenance is more or less flushed; sometimes florid, at other times bloated and grim; sometimes lurid and sullen. The tongue at first is clean; afterwards white, rough, dry, and parched. The lips are often dry, parched, pale, and shrivelled, at an early period. Thirst is sometimes considerable, often urgent, and at other times not materially increased. Nausea and vomiting are common. The bowels are constipated, or act capriciously. Colic, or pains in the umbilical region, are often intense. Pains, with a sensation of distress in the loins, limbs, and all over the body, are very great; sometimes excruciating, "and always accompanied with a sense of unavailing irksome constriction." The heat of the body is often ardent, especially at the præcordia. The pulse is often small, frequent, and irregular; sometimes sluggish and obscure; rarely buoyant and elastic. The skin is thick and compacted, and the general sensibility diminished. The symptoms of distress go on increasing for a given time; they then abate, but never entirely subside. This abatement usually takes place at the end of about twelve hours. The symptoms which are more strictly febrile go on increasing regularly to the third day, sometimes to the fifth or seventh. If a fluid and profuse perspiration then takes place, with an expanded pulse, a favourable crisis is expected. If these changes do not occur, if the pulse be obscure and concentrated, the skin foul, thick, and compacted, and the vascular commotion subside, the retrograde stage begins. This period is characterized by the appearance of shades of yellow in the white of the eye, about the mouth and neck; by the sinking of the pulse, and of the heat of the body; with a dingy and withered appearance of the skin, especially about the joints. Vomiting takes place without retching or straining. The matter ejected is sometimes ropy, at other times muddy, with villous flakes in it. It is rarely bilious; and at the commencement of the retrograde course, it becomes black, like muddy coffee. The urine is

small in quantity, and highly coloured. The bowels are often obstinately costive, and resist the strongest purgatives. The motions are watery, of a dirty colour, rarely feculent or bilious.

The disease sometimes commences, in this temperament, with violent headach, followed by delirium; this soon abates, and generally hastens death. It is sometimes accompanied with a bloated and heavy countenance, of an unnatural expression, and it is often wild and agitated. The heat of the body, which was great, deep, and concentrated, falls first in the extremities, and afterwards over the whole body, as the retrograde stage advances, until it sinks below the natural standard. The skin becomes compacted, and insensible to the stimulus of blisters. It is sometimes dotted with petechiæ, but oftener streaked with yellow lines, or covered by patches of a blue and leaden colour, especially on flaccid parts. The sense of internal distress increases as the febrile action subsides; distention of the hypochondria, with explosions of wind from the stomach, are frequent, with occasional obscure hiccupings.

"The vomiting is sometimes an early symptom; at other times it is not observed until the fever begins to abate, when it becomes unrestrainable: the matter ejected is then muddy, like turbid coffee; sometimes of an inky black, like the juice of the cuttle-fish." The evacuations by stool also become black at the commencement of this stage. "The disease often terminates in death within the fifth day. Signs of imperfect crisis are often observed about the seventh day, if the disease be protracted to that period. These sometimes improve to symptoms that eventually lead to returning health."—"They oftener indicate a pause, which is followed by a new train of action, which terminates ultimately in death." In such cases, blood often oozes from the gums, and from the parts about the mouth and throat. When the tongue continues covered by it, the case is hopeless; when it flows freely, and is spit out with force, there is some promise of recovery.

Dissection.—"In the rapid forms, where there is, strictly speaking, only one course, effusions of blood are sometimes noticed on the surface of the brain, from ruptured vessels, without marks of regular inflammation: in the protracted, in which there has been abatement or obscure crisis, the membranes, and even the substance of the brain itself, appear often to have sustained more or less of inflammatory action, either as a first or secondary act. In such case the ventricles are ordinarily filled with bloody serum, the base of the brain sometimes deluged by it. The interior surface of the stomach, particularly near the cardiac orifice, is more or less inflamed in all cases; it is nearly gangrened in some: the inflamed appearance is ordinarily in streaks or in patches, sometimes in points—clustered like measles. The villous coat is often abraded, the mucous membrane loose, and

partially separated. The liver is sometimes, perhaps generally, turgid and increased in size, with marks of vascular distention; sometimes it is gorged with blood, and in a manner rotten: the spleen is frequently similar—often distended almost to rupture. The gall bladder is sometimes filled with bile—thick and black, like tar or molasses; sometimes it is almost empty,—the bile comparatively thin or fluid. The interior of the small intestines resembles the interior of the stomach; the large intestines are irregularly contracted or dilated, and often gangrened in particular places, without marks of previous inflammation. The heart is generally sound in the more rapid forms of the disease; in some of the more protracted, the pericardium is more or less distended with bloody serum. The lungs suffer little comparatively in the primary course; in the more protracted, they are liable to accidents, viz. irregular determinations, inflammations, and abscesses, or effusions of purulence apparently suddenly formed." p. 78.

The form of the disease just described was not of so frequent occurrence as the two following, about to be detailed; we have, however, given it at considerable length, since it more nearly approaches the character which the disease assumes among individuals lately arrived in an intertropical climate. Dr. Jackson proceeds next to describe the symptoms which the disorder manifests in the *lymphous or phlegmatic temperament.* It sometimes comes on suddenly, as a stroke of lightning;—the patient falls down in a fit of insensibility, or exhibits a paroxysm of delirium amounting to madness,—fierce, but of short duration. Sickness and vomiting, or oftener a desire to vomit, without the power to effect it, are frequently synchronous with the attack upon the head. At other times, the disease begins with excruciating tormina in the bowels, with a sense of constriction and want of expulsive power. These symptoms generally abate or subside within twelve hours. The countenance is pale, torpid, and inanimate; the lips are pale, dry, and shrivelled; the thirst is seldom great; there is a sense of suspended power throughout the whole alimentary canal, more distressing than severe pain. The pulse is slow and regular, and rarely so increased in frequency as to be deemed febrile. "Alternate chills and flushings of heat mark the commencement of the disease, but are less conspicuous than in most." The temperature of the body is rarely above natural; it is sometimes below it. Uneasiness, impatience of pressure, and distress of stomach, are common. The bowels are almost insensible to the action of purgatives, which, although of the most energetic kind, either produce no effect, or only watery evacuations—cold, ropy, and black, as if from the admixture of charcoal. As the disease advances, the pulse sinks in frequency and in tone. It is generally regular, scarcely ever above seventy, and sometimes not

more than forty, in the minute. It is deficient in elasticity, and in febrile irritability.

This form of the disease is characterized by a torpor and apathy, which pervade all the movements of the system. It is rarely accompanied, after the tumult of invasion is past, with sufferings of pain, with the exception of anguish at stomach. The secretion and excretion of bile are suspended; and the evacuations upwards and downwards have no bilious character. The dejections are not feculent; they are often black, like charcoal-water, interspersed with grains like gunpowder, or with abrasions from the interior coat of the intestines. A change or suspension of the biliary secretions, Dr. Jackson considers an important phenomenon in the history of the epidemic of Andalusia. "A similar circumstance was observed on some occasions by the author in the West Indies; but it was rare in comparison of what happened at Cadiz and Xerez in 1820. It was there common; and it is, moreover, worthy of remark, that the alvine evacuation, in many persons who were in ordinary health, was of a dark colour during the epidemic period, as if charcoal had been mixed with the food." When the head was the principal seat of the morbid act, the disease often terminated fatally in twenty-four hours. When this organ was affected with a less degree of violence, it was protracted to the third or fifth, and sometimes to the seventh day, when it terminated fatally, either by gradual diminution of vital power, or by convulsion and stupor. The fatal changes happened at common critical periods; and when the nearly stagnant life resumed a course which terminated in health, it was always on the third, fifth, or seventh day, on which the commencement of a favourable change took place.

Dissection.—The appearances to be met with in those who die of this form of the disease, are according to its duration. If it have terminated within the twenty-four hours, there are observed, "turgidness of blood-vessels in the brain, preternatural firmness of the substance of the encephalon itself, effusion of water into the ventricles, not unfrequently at the base of the brain, and in the theca of the spinal marrow." If the course be protracted after the third day, the liver and spleen "are often found gorged with black blood, so as to be perfectly rotten." Patches of gangrene are often observed at different parts of the intestinal canal, without marks of preceding inflammation. "The diameter of the intestines is sometimes preternaturally contracted, and actual *introsusceptio* is not uncommon." The cavity of the intestinal tube contains more or less of a dirty fluid, resembling the juices of the cuttle-fish. Its mucous membrane is often loose at different parts,—separated at some, and floating n the fluid. The heart and lungs are sometimes filled

with a black blood, and the pericardium contains more of a watery fluid than usual. "The body rarely appears to suffer diminution of its bulk," as in other fevers; "there appears to be a complete restriction on the organs of waste or expenditure during its continuance."

This form of the disease was frequent. The following, "as it was manifested on the *base of the serous temperament*," Dr. Jackson considered as "dominant and insidious," during the epidemic of 1820. We give its principal features as concisely as possible:—

Its mode of commencement was various: its attack was sometimes marked by chilliness, and the usual phenomena of the remittent type. The disease frequently proceeded under this obscurely remitting form, to the third, and sometimes to the fifth day. At the end of that period the disease assumed a continued character; a tinge of lurid yellow, with the vomiting and dejection by stool of an inky fluid, and the other symptoms, as detailed in the immediately preceding form of the malady, now made their appearance, and ran the course described as appertaining to that variety of the disease. Beside the mode now noticed, it sometimes commenced as a remittent of a mild character, and retained that type for several days. The periodical excitements at length vanished. No marks of fever, strictly speaking, could be observed; and many of the symptoms were those of returning health. The pulse, however, wanted elasticity; the skin was flaccid, the countenance without animation. The patient was listless in the extreme; "the tongue became of a scarlet red,—and dry withal; the whole system withered like the autumnal leaf;" the eye and countenance became of a dusky yellow; the current of life declined apace. Death was the common issue of this state, but not always. The vital energy sometimes made a successful effort; and the patient appeared as resuscitated from this forlorn condition.

The yellow fever commenced also on many occasions, and continued, as catarrh or febricula, for three or four days, or more. It was "not attended by any symptom calculated to give direct alarm to those unacquainted with the insidious character of diseases in epidemic seasons." On the morning of the third, fourth, or fifth day, the countenance assumed an appearance no longer ambiguous;—it became flaccid, dingy, and withered. Vomiting of a deeper black even than that formerly described now supervened. The remaining course became astonishingly rapid, and the symptoms nearly the same with those described in the last stage of the second form of the disease. Life was seldom protracted beyond twenty-four hours after this change took place.

Dissection.—"The more characteristic external mark of this

form of the disease consists in an appearance of withering like blight in plants. The more striking internal character is found in the consumption of the animal juices, particularly of the red blood; in the diminution of the internal spongy organs," and in the wasting of the muscular fibre. The flesh is flabby and pale; the serous membranes appear withered and bleached; the heart is flaccid, and diminished in size; the intestines are pale; the great veins are bloodless. "The consumption of blood is striking, and to such an extent, that it would be impossible to collect two ounces from all the veins in the body."

How come these very striking appearances to take place? Has not the black vomit, which is greatest in this form of the disease, left the textures and organs of the body in an exsanguinous state? There now remains not a doubt in the minds of the best pathologists, who have seen any thing of yellow fever, respecting the source of this peculiar appearance in the matter ejected. That it is derived from the capillary vessels in the mucous coat of the intestinal tube, will be admitted by any one who has seen a single dissection of the disease. The peculiarly black appearance and muddy character which it assumes may be accounted for, partly from the exudation of blood from these vessels, and, in some measure, from the diminution that takes place in the decarbonization of this fluid, owing to the deficiency of nervous influence, which leaves it of a darker colour than natural; and it may be also in part explained, from the altered and black secretions of the mucous follicles, arising in consequence of a vicarious influence which these organs exert, in ridding the circulating mass of a superabundant element, which cannot be otherwise disposed of, in consequence of the general torpor that invades the viscera, to whom this office is peculiarly allotted, and which renders them incapable of the functions they perform in health.

Besides this withering process just described, the author mentions another form which the disease assumes, as it is manifested on the same base or temperament. In this, death takes place from a process of dissolution or liquescence. It commences in the usual manner, and rarely shows any thing peculiar until the third or fourth day. The skin then becomes damp, flaccid, and covered by a cold dewy moisture. The cheeks and lips become of a cherry red. The fetor from the body is sickly and faint. The alvine evacuations are extremely offensive. The patient gradually sinks about the seventh or eighth day.

In addition to these modifications of the fever, Dr. Jackson instances others, which sometimes manifested themselves, chiefly upon "the sentient system," giving rise, to convulsions, stupor, insensibility resembling apoplexy, or to furious delirium, with

a tumultuous and agitated pulse, and sometimes to faintings, &c.; one or more of these accompanied the symptoms already detailed. "No safe prognostic could be given of the result of this form of the disease."

Another form of this malady was accompanied with diminished power of circulation, coldness of the extremities, swollen tongue, bloated and livid countenance, &c. Its termination in death at an early period was marked by a congested and gangrenous state of the liver and spleen. It sometimes terminated in recovery, by an unexpected evolution of the powers of life, without any evident cause.

We cannot follow the author at greater length in his minute descriptions of the various phenomena which arise through the course of this disease. We have exhibited a condensed view of the leading characters of this dreadful disorder, according to the principal distinguishing features which he has assumed. There is a great proportion of concise and striking description in this part of the work; but the same ideas are sometimes repeated in different sections, from an apparent desire to exhibit a faithful picture of what he saw. Notwithstanding this, few medical details with which we have been lately furnished leave a more lasting impression on the mind, or rouse it more effectually to connect the external phenomena which strike the senses during the course of the disorder with the structural changes and progressive pathology of the internal viscera, during its destructive march. The forms or modifications of the disease are arranged according to physiological distinctions, the justness of which every one will not feel inclined to admit.

Respecting the chapter upon the prognosis we must be very brief. Symptoms indicating violent attacks upon the brain, unless promptly and decidedly treated, denoted great danger. A swollen, flabby, and glutinous state of the tongue; a torpid and statue-like expression of countenance; a lip of cherry redness; a glistening, glassy, and ghastly appearance of the eye; a nauseous odour from the body; a damp, flabby, torpid, and insensible state of the skin; dryness and paleness of the lips; and streaks and patches of a livid, green, or violet colour, indicated the utmost danger. The black vomit was not always a fatal symptom in the Andalusian fever; it is almost always so in the West Indies. Obscure hiccup marked imminent danger; an open, free, and strong hiccup, was not unfavourable. A frequent desire, with inability to procure a motion, insensibility to the action of purgatives, watery dirty stools—muddy like coffee grounds, or black as charcoal and water, with shreds of the detached mucous coat floating in it, were of the worst prognostic. Free, feculent, or bilious evacuations, were favourable. Defect of the tone, elasticity, and buoyancy of the pulse; a caustic heat;

or a torpid deficiency of it, if below the natural standard, were dangerous symptoms.

The next chapter treats of the *methods of cure* that may be employed. Dr. Jackson first passes in review the plans pursued by the Spanish Practitioners. Dr. Arejula, a man of learning and accomplishment, as may be expected from the period of his studies, and even of his writings, has adopted the opinions of Brown. He exhibits an emetic at the commencement of the disease; afterwards bark and bouillon are given alternately, the former in frequent and increased doses, until it sometimes amounts to four drams, every third hour; or when the stomach will not retain it, two drams every second hour. When this organ is irritable, syrup of poppies, or opium and æther, are given along with it; or the tincture, with æther and sulphuric acid, are substituted, in place of the bark in substance. Blisters and sinapisms are applied to different parts of the body, and removed as soon as they excite irritation. He also employs enemata of tepid sea-water; and administers his other remedies in that manner in proportionably larger doses, if medicine cannot be retained upon the stomach. Dr. Arejula asserts that his plan is successful; respecting that Dr. Jackson is sceptical.

Dr. Flores de Moreno is most employed at Cadiz; he has visited warm climates, has written on yellow fever, and, notwithstanding his experience in the various Spanish epidemics, expresses his obligations to the writings of Dr. Rush. Dr. Flores endeavours to allay the tumult of invasion by soothing remedies. He afterwards exhibits calomel and jalap, or two grains of calomel alone, every two hours, until stools are procured. He directs beef-tea to be given at intervals as means of support, and attempts to accelerate the operation of the purgatives by the aid of clysters of sea-water, with some spoonfuls of olive oil. If this fail, castor oil, or some other purgative, is given every hour until it operate. By these means are obtained, he asserts, abundant and bilious evacuations, and with bilious stools relief from the more urgent symptoms.

These steps having been secured, tincture of bark, &c. is ordered to be given. When the disease is more urgent, Dr. Flores directs a strong sinapism or blister to be applied to the pit of the stomach. Hoffman's anodyne, serpentaria, and tinctura opii, are exhibited according to circumstances; and the patient's strength supported by these means, conjoined with the free exhibition of bark; and by bouillon, panada, and rice-cream, given frequently, but in small quantities. If the irritability of the stomach be great, he exhibits a mixture composed of decoction of bark, tincture of bark, snake-root, and æther; with occasional clysters of tepid sea-water. If these fail, and if hiccup supervene, sinapisms and blisters are applied to the epigastrium.

Bark, with the addition of diffusible stimuli in various forms, and blisters and sinapisms to different parts of the body, are resorted to, when symptoms of collapse make their appearance. When oozings of blood are present, the mineral acids, with bark, are chiefly trusted to. These physicians have published no document by which an opinion can be formed of the degree of mortality in their practice relatively with that of others. Dr. Jackson thinks, from the detail of cases published by Dr. Flores, that the epidemics of 1810, 1813, and 1814, were not precisely of the same form, nor so treacherous, as that of 1820. In the epidemic of 1819, Dr. Flores was not more successful than others; the number of individuals that died under his care exceeded twenty in a day on some occasions.

Blood-letting had been entirely proscribed among the Spanish Physicians since 1800. In September, 1820, an English medical man, resident in Cadiz, was attacked by the epidemic in one of its worst forms. He was seen at an early period of the disease by Dr. Jackson, and another English medical officer. He was bled to between four and five pounds; and instead of being buried in two days, as predicted by some, he appeared in the streets in ten days. This gentleman treated others that came under his care in a similar manner; not one of them died. This attracted the notice of some of the most eminent practitioners of that city. "The yellow fever appeared, by the official reports, to have been less fatal after this change in the method of treatment had been adopted than the common diseases of the season." So great a difference in the official returns, Dr. Jackson attributes in part to other causes in operation at that period. These we cannot particularize; nor can we follow our esteemed author in his very judicious observations respecting the low estimation in which medical talent is held in Spain, and on the degraded state of medical science in that country. Dr. J. considers that the mortality at Xerez was not in reality less than one-half of those who were attacked.

Dr. Jackson next details his method of conducting the cure of yellow fever. He introduces this subject with some general observations respecting the treatment of fever, and the views of practice generally entertained. These he divides into three heads: viz. 1st. To leave it nearly to its own course; 2d. To interrupt and moderate its violence; and, 3d. To arrest the diseased action altogether, "and leave the system open to the powers provided for exciting and maintaining the customary movements of health."

The first is the view of practice which obtains most commonly in Spain. Dr. J. considers the means of cure adopted by the Spanish Physicians insufficient to obtain any of the other indications. The second rule of practice usually pursued by

active practitioners in the febrile diseases of temperate climates, viz. that which is directed "against symptoms or tendencies which threaten destruction to particular organs," cannot be relied upon in yellow fever. "It mitigates violence; but it does not break the chain of the diseased movement, and thus produce decided arrest of what is wrong." This mode of practice must have place in yellow fever, either when the physician fails in effecting the third indication, or when he arrives at too late a period of the disease to attempt it. The third method of practice is decisive; it is, however, difficult of execution: but it ought to be entered upon with judgment and boldness, and only at an early period of the diseased course,—within six or eight hours from the commencement of indisposition.

The means which Dr. Jackson recommends in order to effect this are detailed at full length, according to the forms which the disorder assumes in various constitutions.

In the disease that takes place in the *sanguine temperament*, he recommends arteriotomy, or venesection, according to the intensity of the symptoms and the organs chiefly affected, until a change be effected in the circulation, as well as in the general feelings of the patient. When this is attained, the body must be immersed in a warm bath of moderate temperature, and the surface scrubbed with a hair-cloth, or with brushes, until every impurity is removed, and until its sensibility be increased to preternatural acuteness. If headach, heat and pain of the eyes, tenderness from pressure of the stomach, a tense or embarrassed pulse, either remain or return, "the vein is to be re-opened while the body is under immersion, and the blood allowed to flow until the uneasiness vanish, or until signs of approaching syncope supervene." When the change contemplated is effected, the patient is to be raised up, the head and shoulders copiously aspersed with cold water, the lower extremities still remaining immersed in the bath. If local pains and tension of the pulse are removed, the cold affusion may be again repeated; he may afterwards be placed in bed, and, after a quarter of an hour's repose, again examined. If headach has been particularly severe, the hair must be shaved from off the scalp, and cold application resorted to.

If the effect of these measures be imperfect, either from not having been carried to sufficient extent, or from the violence of the disease, "they are to be repeated with such modification as the then circumstances demand." The function of the alimentary canal is next to be attended to; that of the skin ought also to be kept in recollection. The free excretion of these surfaces is to be obtained from the combination of mild purgatives with diaphoretics. The form which the author recommends, "is three grains of calomel, three of genuine James's powder,

ten of nitre, twenty of flowers of sulphur, and six of kali, made into a bolus, and given every four hours, with two ounces of infusion of senna, and two or three drams of the liq. ammon. acetat." This appears to him to be efficient, from its extensive mode of affecting the capillary system, especially after the preparatory operation of the warm bath and depletion.

Dr. J. very justly considers, that injury instead of advantage is derived from the employment of drastic purgatives, in many cases of this malady. If the subject of yellow fever has not come under the eye of the physician until the second day of the disease, and no symptom of injury to the structure of any internal organ has yet made its appearance, immersion in a warm bath, with the process just described, must be resorted to; and after the circulation has been elicited to the surface by these means, a vein is to be opened, and blood taken according to the effects which its detraction may produce. If this fail, the temperature of the bath is to be heightened, and depletion repeated, if requisite. Cold aspersion of the head and shoulders is the next step, after which the body must be wiped dry, and laid carefully in bed. A blister may be applied to the pit of the stomach, in all such cases, as a precautionary measure. Blisters ought also to be applied to the temples and nape of the neck, if any suspicious symptom of disease about the head remain. For a more detailed account of the various auxiliaries that ought to be employed, and the means to be resorted to under peculiar symptoms, we must refer our readers to the work.

In the form of fever which appears in the *phlegmatic or lymphous* temperament, and is characterized by torpor in the circulating system, our author recommends, in its early stage, immersion in a warm bath of a high temperature, with the same discipline in the bath as formerly noticed. Abstraction of blood while the body is immersed, must next be adopted, and carried to an extent indicated by its effects. When the circulation is equalized by these means, the cold affusion may be employed. He recommends the head to be shaved and blistered in this form of the disease, and a blister, moxa, or the actual cautery, to be applied along the spine, between the shoulders and the occiput. After the preparatory operation of bleeding and the warm bath, he considers that an emetic may be resorted to with advantage, and for this purpose recommends the turbith mineral. The purgative remedies recommended, are the purging tincture of aloes and myrrh, with one dram of æther, or an ounce of oil of turpentine. This combination has produced, in the extensive experience of the author, copious feculent evacuations, while it preserves the energy of the system, and prevents that torpor and apathy of the internal organs so much to be

dreaded in this form of the disease. Heat should be afterwards applied to the surface of the body. If these means have been commenced at an early period of the disease, its course will generally be arrested. In these forms of the malady, characterized by a still greater torpor of the vital energy of the system, suspension of the biliary secretions, with watery, muddy, and griping stools; a stimulating and aromatic draught must be given, while the patient is immersed in a warm bath of a high temperature, and undergoing frictions; blood-letting, according to its effect, may then be employed. After being removed from the bath, hot, aromatic, and dry friction, ought to be instituted. The purging combination just mentioned is afterwards to be exhibited, with diaphoretics and other tonic purgatives, which circumstances may require. Serpentaria, diluents, opium, champaigne, camphor, ammonia, soda-water, frictions with hot olive oil, sinapisms, blisters to the stomach, calves of the legs, nape of the neck, &c., may be had recourse to, either as preventive of internal organic derangement, or in order to combat it during its progress. Dr. Jackson considers that the irritability of the stomach is best allayed or soothed by milk, hock with soda-water, or by the Seidlitz powders. Blisters to the epigastrium and abdomen ought not to be neglected in such cases. When stupor supervenes, blisters to the scalp, nape of the neck, and calves of the legs, are recommended; and also moxa, or the actual cautery to the nape of the neck, are spoken of with confidence during this affection.

In the third form of the disease, as it is manifested in *the serous* temperament, and as it is characterized by a withered or blighted appearance, Dr. Jackson recommends energetic measures at the commencement, or as soon as it is subjected to our management. If the patient is seen at an early period of the disorder, he must be immersed in a warm bath of moderate temperature, and have the surface of the body scrubbed with brushes, and the skin softened with bran, &c. After this has been continued for some time, a vein is to be opened, and blood taken, until signs of relaxation are general throughout the system. The head and shoulders are then to be raised out of the bath, and subjected to the cold affusion. He is afterwards to be immersed in a bath of a higher temperature, and to have the surface scrubbed with a hair-cloth; he must next undergo a second and more general cold affusion; after which, he is to be wiped dry, laid in bed, and rubbed all over with hot olive oil; infusion of snake-root, with the liquor ammon. acetat., being given internally at the same time, in adequate doses, so as to maintain the capillary action on the surface.

We cannot enter more minutely into Dr. Jackson's means of cure. Our readers will find the outline with which we have

furnished them amply filled up in the work before us; and remedial measures, both of the first importance, and of subsidiary influence, treated in the most circumstantial manner. We have entered fully into the consideration of the work, because we consider the subject, whether it be viewed according to its etiology, the phenomena by which it is characterized in various climates, and in successive epidemics, and the method of cure found most successful against its ravages, not deserving attention alone, as a subject of individual and isolated interest; but also as it furnishes materials to every reflecting mind, for acquiring a knowledge of the operations of the animal economy, and of the manner in which it may be affected from the influence of external agents, both in health and in disease. A close consideration of the subject will not be without its interest to those, who are desirous of treating with efficiency the worst forms of fever, even in this climate. And we can with confidence assert, that the experience of our author, as it is exhibited in the present volume, will furnish useful practical suggestions to those who think and act for themselves, while combating similar forms of diseased action. The various details which are presented to us in this work, are entirely unconnected with any theoretical opinion, respecting the nature and proximate cause of fever. They stand correct and faithful pictures of the operations of nature, as they are observed in the animal economy, during the course of epidemic disease; among which, no theory of fever hitherto framed can claim a general resemblance, nor receive any exclusive support from the descriptions which are so strikingly furnished us. Dr. Jackson concludes the work with some observations respecting the law of quarantine, into which we are entirely precluded from entering.

A Treatise on Indigestion and its consequences, called Nervous and Bilious Complaints, with Observations on the Organic Diseases in which they sometimes terminate. By A. P. W. Philip, M. D. F. R. S. &c. pp. 391. 8vo. Second Edition. London, 1822.

(From the Quarterly Journal of Foreign Medicine and Surgery.)

If Dr. Wilson Philip had been as well skilled in puffing as he is in experimenting, he would, we are persuaded, have acquired a much higher reputation, than his modesty and plain good sense, have been able to procure for his originality of research in medicine and physiology. His character is, in this respect, truly English, without a particle of the forwardness and frippery, which are so obtrusive in the French *savans*, and their

English imitators. We were very much struck with this contrast in reading his admirable work on the Vital Functions, in which, though he completely overturns many of the boasted conclusions of M. Le Gallois, that, according to the report of the French Institute, had proved all former systems erroneous, and were to form a grand era in Physiology; yet, so much better skilled are MM. Le Gallois and Cuvier in exhibiting *themselves* and telling their story to advantage, that Dr. Wilson Philip, even with a better cause, and with truth on his side, appears from his modesty, to be but a small philosopher beside the high-toned Frenchmen. Sallust in his Cataline ascribes all the glory of Grecian achievement to the eloquence of their historians; and for a similar reason, we should think, that had Dr. Wilson Philip read memoirs of his discoveries in the French Institute, and had had reports of them drawn up by Cuvier, the secretary, instead of sending them to the Royal Society of London in his own plain and manly style, he would at this moment be famed throughout Europe as the greatest philosophical physician and physiologist of the age.

But though his merits have not been thus prematurely lauded, his works on the Vital Functions, and on fevers, have been gradually gaining ground, in the esteem of the profession, and will, we have no doubt, honourably establish his reputation on a permanent basis. The work now before us, upon perhaps the most generally prevalent, and of course the most important class of diseases, manifests the same accuracy of observation, the same ardour of experimental research, and the same judgment in the constitutional and local treatment, which distinguish Dr. W. Philip's former well known works; and the rapid sale of the first edition is the best proof of his rising reputation, as well as the merit of the book. As the subject is of considerable interest to the profession, notwithstanding the numerous able works which have lately appeared on it, we shall give a brief digested analysis of the most useful parts of the work, from which our readers will be better able to judge of its merits and value, than from any thing which we can say in its praise. We shall not in doing this confine ourselves to what is strictly original in Dr. Wilson Philip, but give, as far as our limits permit, a fair miniature of the whole work.

The SYMPTOMS of indigestion may be conveniently and naturally arranged under three stages. The FIRST STAGE is characterized by such symptoms as arise from food remaining undigested in the stomach and bowels, though their functions be otherwise healthy and natural. These symptoms are flatulence, distention, and disagreeable eructations; which indeed may at times occur in the healthiest individuals, although occasioning only temporary uneasiness. But when, from incau-

tiously eating indigestible food, or from overloading the stomach, these symptoms frequently recur, the hitherto healthy state of the viscera is changed, and the secretions become disordered and unhealthy. The mouth is clammy, and the tongue white or brownish; the appetite is impaired; there is thirst; and the feet are apt to be cold. The first strongly marked symptom, however, is depression of strength, or great feebleness and languor, both of body and mind. The natural discharges then become altered. The fæces are either darker, from the bile being too copious or vitiated; or they are too light, from a deficiency of bile—sometimes, indeed, they become quite black. The urine is apt to deposit a pink or lateritious sediment, which experiment proves to indicate too much acid in the system; or it is turbid with white mucous-like flakes, indicating superabundant alkalescence.—When the bowels are loose, the urine is copious and pale, as is the case in high nervous excitement; when constipated, the urine is scanty and high coloured. The skin separates nearly the same sort of matter from the blood as the kidneys; and when from debility it becomes dry and torpid, or is constricted by cold, both the urine and the alvine discharge are in consequence increased. The symptoms arising from sympathy are innumerable: head-aches, dimness of sight, floating spectra, ringing in the ears, with pains and uneasiness in the extremities, are some of the most usual. Great care should be taken to distinguish between *debility* and *depression of strength*, as they require very opposite treatment. Recovery from debility must always be slow; while from depression, it may be rapid in proportion as the cause has been of short duration, or is easily removed.

The SECOND STAGE is characterized by a tenderness on pressure of the soft parts on the right side, in a spot about the size of a shilling, lying between the pit of the stomach and the bend of the ribs, and corresponding, as Dr. Wilson Philip ascertained by dissection, to the extremity of the pylorus. The patient is seldom aware of this till the physician points it out—an admirable professional secret, for gaining the reputation of skill and sagacity. When this tenderness is considerable, or has been of some continuance, the pulse becomes hard, but *to feel this we must employ the slightest possible pressure, withdrawing the finger till it barely touches the skin; for much pressure will make even a hard pulse feel somewhat soft.* As the disease advances, the thirst increases—and instead of the hands and feet being chilly, they are apt to burn and flush—night or morning, sweats often supervene—and there is increased reluctance to motion and exercise.

In the THIRD STAGE, the secondary symptoms of the head, chest, bowels, &c. become the most prominent, and frequently

lead to organic disease, which, singular to remark, never occurs in the parts primarily affected. It is thus that hydrocephalus, amaurosis, deafness, schirrous liver, and phthisis pulmonalis, as well as unhealthy ulcers, may arise from indigestion; while the stomach, which was first affected, recovers, or is apparently little affected, in the same way as a blister, which induces a secondary disease, will often remove a primary one. The principle is general. When extensive disease of the liver, for example, spreads to the lungs, the liver frequently recovers while the patient is sinking under phthisis. It is also an important remark, that nervous pains, such as that in the shoulder in hepatitis, and in the arm from chronic carditis, may at length, by continuance, produce inflammation and fever. The liability of one part rather than another to be affected with secondary symptoms Dr. Wilson Philip properly ascribes to original peculiarity of constitution, congenital weakness, irritability, or to accidental injury of *a part*.

In treating of the causes of indigestion, Dr. Wilson Philip gives us first an account of healthy digestion; and no living author, we believe, has investigated this subject more profoundly, or more accurately than he. The stomach secretes a fluid somewhat like the saliva of the mouth, which has the power of converting the food into a uniform pulpy mass. When the food is thus prepared, the muscular movements of the stomach, propel it into the duodenum. This movement has been minutely investigated by the experiments of Dr. Wilson Philip, who killed upwards of a hundred rabbits in his researches, of which, a more detailed account is given in his work on the Vital Functions. His late public experiments at the Royal Institution establish his facts beyond question, as even his former opponents now testify his accuracy. He found that only the portion of food which is *spread over the inner surface of the stomach, is digested and moved forwards*, a circumstance which had escaped Reaumur, Hunter, Stevens, and Spallanzani. The food which is in the centre, and at a distance from the gastric fluid, remains unchanged, till the removal of the portion digested, makes way for it to be spread out in turn. This agrees admirably with the acute observations of M. Lallemand, *Quart. Journ. For. Med. III.* 88. Dr. Wilson Philip thinks hunger is caused by the gastric juice acting on an empty stomach, and he instances a healthy man, who, after having fasted twenty-four hours, upon taking an emetic and evacuating the gastric juice, had his hunger completely removed. How does he explain hunger's being increased by cold and allayed by heat?—When the food passes into the duodenum, it is mixed with the bile and the pancreatic juice, and reduced to chyle, which, as it is always of the same white milky appearance whatever food be taken, must be form-

ed in a great measure from the bile and pancreatic juice, or at least must be greatly influenced by their chemical action. It follows from this (and the inference is most important), that any derangement of the liver or pancreas must be immediately felt in all the subsequent processes through which the aliment passes—in the residuum which passes through the bowels (as well as in the blood), and the secretions derived from it.

The REMOTE CAUSES of indigestion may be divided into those which affect the nerves, by whose influence the gastric juice is secreted; and those which affect the muscular power, of propelling the digested food from the stomach into the duodenum, the intestines, and the thoracic duct. Of the former, we may mention wine in every form, opium, and other narcotics, such as tea, coffee, and tobacco; hard study; indulgence in venery, and other sensualities; violent passions, &c. Among the latter, distention of the stomach is the chief. This may arise from eating too fast, in which case more is eaten than there is fluid to dissolve: from high seasoning and great variety of food; from drinking wine during meals, in which case too much is eaten in order to satiate the overflow of the gastric fluid excited by the stimulus; and from eating food which swells much after it is taken into the stomach:—we say *much*, for all sorts of food swell more or less. Distention acts on the nervous power, and in this view may be ranked in the first division. Besides these, all extensive diseases in any part of the body affect the stomach by sympathy; and it is important to notice, that all sympathetic affections become causes, which support and aggravate the primary disease. For example, *indigestion causes debility of the skin, and this debility* REACTING *increases the indigestion.* It is this which so often protracts disease, and baffles the utmost sagacity and skill of the physician.

The IMMEDIATE CAUSES of a disease are the *most* important for the physician to ascertain. Before it was known that angina pectoris arises from the obstructed passage of the blood through the heart, all sorts of stimulants and antispasmodics were given, because the symptoms resembled spasm! In the same way, indigestion is often still erroneously treated, from ignorance of the immediate causes. The immediate cause of the symptoms of the first stage is, the debility induced by the remote causes preventing a due change in the food, and affecting the stomach, the bowels, and the parts which sympathize with them. This sympathy is usually referred to a communication of nerves; but as many parts sympathize where there is no trace of such communication, Dr. Wilson Philip thinks with Abernethy, and other enlightened physiologists, that it takes place in the brain and spinal marrow; in the case, for example, of continuing to refer pain or cold to an amputated limb. Contact or

contiguity of parts very frequently produces a diffusion of disease when there is no direct nervous communication, on the same principle perhaps as contagion from contact. In this way, he accounts for the liver being affected with disease of the stomach. The pain and tenderness in the second stage, he thinks, is an inflammatory state of the pylorus, and of the thin edge of the liver that lies over it and in contact with it; which affections go on to produce hard pulse and fever. This ought to make the practitioner wary, not to continue the treatment proper to the first stage, when the second has commenced, as he would otherwise infallibly aggravate the disease. Febrile and inflammatory diseases always begin with debility of the capillary or finer vessels, and consequent increased action of the larger vessels; while nervous diseases on the contrary, begin with debility of the larger vessels, though this always ends, if the disease is prolonged in debility of the finer vessels, producing chronic inflammation most difficult to cure. This is the case with the second stage of indigestion, the access of which, as it can then only be effectually counteracted, ought to be watched with great care; for the disease has generally made progress, before the patient, unless closely questioned, is aware of his danger. In these circumstances, the state of the blood, and consequently of all the fluids, must be deranged and corrupted in consequence of diseased digestion, and this also must cause fresh disorders in all parts of the system. Mr. Abernethy found many wounds and ulcers, which resisted every other treatment, yield to medicines which restored and invigorated digestion. Dr. Wilson Philip very properly distinguishes between distention of the liver, and of the duodenum; the latter being felt lower down, and giving a different sensation to the hand.

The TREATMENT of indigestion must be begun by removing the causes above stated, and by attending to the due exercise, both of body and mind, particularly to the exercise of the stomach. As to DIET, food should be eaten slowly, in order that it may be well mixed with the saliva; and not taken in too great quantity to oppress the stomach, as indigestion usually arises from the stomach being irritated, either by food not well masticated or by food of difficult digestion. It is of much moment therefore to ascertain what sorts of food are of easiest digestion; though, in some rarer cases, we are baffled in referring to general principles by constitutional peculiarities. The celebrated Dr. Gall could not eat mutton, however disguised, without suffering violent irritation. When the stomach is weak, the gastric fluid does not answer to be diluted with much liquid; nor does it agree with oily or ascescent food; in such cases, animal food and stale bread with spare drink, is best fitted for the patient. All mucilages are of difficult digestion, and therefore

the flesh of all young animals which abounds in mucilage, except perhaps veal, is improper for weak stomachs. Food abounding in mucilage is popularly called *light*, *but this relates merely to its less tendency to produce fever and inflammation* than beef, or even mutton; and the same observation applies to the white sorts of fish. All food thus called light *is of difficult digestion*, but may be allowed in fever. Fat meat is the most oppressive; and of course, pork, goose, and duck, are not proper for weak stomachs. That eggs disagree with the bilious is erroneous, if they are eaten soft boiled with stale bread. New bread is perhaps the most difficult of all substances to digest, as the paste which it forms presents an impenetrable mass to the gastric fluid, which, according to Dr. Wilson Philip's experiments, acts only on the surface next the stomach. The same remark applies more or less to all mashes and jellies. Mashed potatoes, for example, contrary to popular opinion, are always harder of digestion than when simply masticated. Simple roasting or boiling moderately is the only proper mode of cooking; all the refinements of the art beyond this are injurious. The concentrating of much nutriment in a small compass, as in beef tea, is seldom proper; for, *however strong it may be, it will not allay hunger in the least*, without the mixture of something solid. To prove this novel doctrine he gives an interesting case, and some experiments. Fresh vegetables, particularly peas, beans, cabbage, waxy potatoes, cucumbers, &c. are bad; mealy potatoes, turnips, brocoli, lettuce, &c. are less so. Butter, cheese, and all preparations of milk are oppressive, and generally so in proportion to their richness.

Water is the most proper fluid for diluting our food, and its quantity ought to be regulated so as not to over-dilute the gastric fluid, nor to leave the food too dry, to prevent its solution. But this is not the main use of drink. It is chiefly important in supplying the secreted fluids, such as that of the insensible perspiration; and it is for this reason, when it is superabundant, (as well as in diarrhœa, in which the fluid secretion is so much increased) that thirst is strongly felt. In health, thirst is never troublesome; and it is, consequently, very erroneous in some to drink copiously during meals, for the purpose, as they think, of promoting digestion; though as they have no thirst, it is more likely that this will impair the powers of the stomach by over-diluting the gastric fluid. The patient should rather be sparing in his drink, as the want of the healthy fluids in the mouth and primæ viæ, *will often excite him to drink, when it would be injurious.* Other fluids besides water may have nourishing and other qualities; but when the contents of the stomach are very fluid, digestion cannot go on, for the gastric fluid mixes with the whole mass, rather than with the layer in contact with the sto-

mach, and its strength is dissipated and lost, as it has no power unless it be in contact with the stomach. Soups and broth, when bread is taken with them, may be digested; but it is not the most suitable sort of food in indigestion; for if there is much broth, there will be too much liquid, and if much bread be eaten, a tough and indigestible paste will be formed. Soups, taken before other food, induce patients to eat too much. According to the prevalent habits of society in this country, alcohol is used almost universally, and can seldom be dispensed with, except the abstinence be commenced in early youth. We have, therefore, only to choose it in the least injurious form, which is as it exists in foreign wines. After distillation it is rendered more injurious; and beer and ale, if strong, are very improper for weak stomachs. Tea and coffee have been greatly decried by some; but it does not appear that facts prove them to be very injurious (when not drank too strong or too hot,) except in a few rarer cases. Their effects are but slowly perceived, but from their action on the nervous system, these must ultimately tell on weak systems.

Patients in indigestion should beware of too great a variety in their meals, and except in particular cases, should not take more than three or four moderate meals in twenty-four hours. Between meals nothing should be eaten: to be always taking something, is very injurious, as it disturbs the natural process, and produces weakness. When it is impossible to avoid this altogether, the bad habit should be gradually broken off.

Exercise both of body and mind is indispensable to the cure of indigestion. No part however of medicine, is, we are convinced, more improperly followed by the generality of patients. The physician may, as Dr. Wilson Philip has done, give precise, and positive directions for *moderate* friction; and moderate walking and riding on horseback, to be persisted in daily for weeks, months or years; but according to our experience the patient in all probability will omit this regimen three days in four, and on the fourth, make up as he thinks for his neglect by fatiguing himself into a debilitating perspiration. This error is still more obvious in mental exercise. The languor of the mind, attending every stage of the disease, is not to be subdued, except by the most determined efforts; and the occasional excitement produced by attending places of public amusement, or by dinner or evening parties, will in the end aggravate, rather than allay the distressing bias to despondency. Travelling, and country excursions, with a cheerful companion, we should consider by far the best combination of exercise for both the mind and the body. Cool, dry air, and early rising, are also of great service, and are strongly recommended.

The more strictly medical treatment of the first stage, Dr.

Wilson Philip has illustrated with much skill, by following up the enlightened views of Hamilton and Abernethy. After strictly pursuing the regimen just stated, the action of medicines on the stomach and bowels will be greatly promoted. He usually commences with an emetic, (not if possible to be repeated) followed by some of the milder purgatives or aperients, in order to unload the stomach and bowels. He thinks, and with justice, that emetics have lately fallen into unmerited neglect. When these fail to dislodge and clear away offensive and irritating matter, it is probable the secretions are deranged, and mild stimulants and aromatics may be tried, to promote a better action on the secreting organs. Alkalies are, of course, to be exhibited when acidity prevails; but their action is only temporary, and more animal food *if the patient relish it*, may be eaten; but this diet should not be carried to excess. Pains and spasms arising from acid irritation, if not thus relieved are combated by opiates; diarrhœa, by gentle purgatives, sudorifics, and astringents; vomiting, by soda water, or a mixture of sulph. acid; conserv. ros. and aq. menth.; and in more obstinate cases, by blisters, and opium, and camphor. Dr. Wilson Philip next considers the efficacy of mild stimulants and anodynes; bitters and astringents, with such medicines as maintain a healthy activity of the bowels; the first of which, soothe nervous irritation and excite particular functions; the second, tend to establish a more permanent vigour in the organs of digestion. He is, as we observe, an advocate for *very small doses* of most of the medicines which he prescribes. In the case of stimulants and anodynes, he recommends very small doses of aromatic tinctures, *ammonia pure or carbonated*, camphor, very warm water, applied externally to the stomach; opium and ipecacuanha, the last of which he praises highly in the form of the pulv. ipec. comp. from two to four grains every six or eight hours. A small dose of opium after dinner he has also found useful in many cases. Myrrh, castor, valerian, and asafœtida, he esteems more highly, in nervous irritation than we believe is now fashionable amidst the prevailing rage for innovation. Of bitters—chamomile, orange peel, calumba, cascarilla, and cinchona, are those on which he chiefly relies for perfecting a cure; combined with astringents, among which he properly places iron and sulphuric acid in the first rank. When the liver is deranged, mercury in the form of the blue pill or calomel, in very small doses, followed up by aperients, is to be tried; or the mineral acids, or dandelion may be substituted. Dandelion, we thought, was nearly an obsolete drug of the Boerhaave school. Every body knows the amusing scenes which Zimmermann had with Frederick the Great, in persuading him to take large doses of the nauseous

and probably very inefficient medicine.* Even the name of Dr. Wilson Philip will, scarcely, we think, have influence to restore it to much repute.

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* A young friend on seeing this, suggested that every body does *not* know these anecdotes, and as he may probably be right, we shall give one of the scenes, were it for nothing more than to show the manner of

A GREAT MAN TAKING PHYSIC.

"When I waited," says Zimmermann, "on Frederick, at eight in the morning, the remedy (dandelion) had not been taken; and I found in his majesty no traces of those good resolutions which he had formed the day before. As soon as I entered the apartment, he played off a battery of arguments against the juice of dandelion; but I combated them all with the utmost freedom, which was, indeed, a task of no great difficulty. Our conversation respecting dandelion continued still to grow more animated, and ended in the following manner:

"*Fred.*—I told you before that I would take your medicine but once a day.

"*Zim.*—In that case your majesty will have a very large dose to take at once.

"*Fred.*—How much?

"*Zim.*—Two or three spoonfuls.

"*Fred.*—I do not call that much.

"*Zim.*—So much the better. But two or three spoonfuls of the juice of dandelion, taken at once, may occasion sickness, and even vomiting.

"*Fred.*—In that case I will not take the dandelion.

"*Zim*—What I apprehend, may not happen. Your majesty may begin by very small doses.

"*Fred.*—The slow method I dislike.

"*Zim.*—Your majesty may then take two spoonfuls at first, with a little fennel water, which is friendly to the stomach.

"*Fred.*—May I drink coffee soon after?

"*Zim.*—Half an hour after.

"*Fred.*—But is it not possible that dandelion may have lost that virtue which it had in the time of the Greeks and the Romans?

"*Zim.*—I know that plant and its virtues, not from books alone; I have used the extract of it for thirty years: *every spring I administer, perhaps, more than one hundred pounds of it in all diseases arising from obstructions of the viscera.* But, if what I say cannot convince or persuade your majesty, I beg that, in taking my prescription of dandelion, you will do with me as Alexander did with his physician, who, according to report, intended to poison him: 'Please to swallow this poison in my presence;' let your majesty then fix your eyes upon me, and you will see that I will not change countenance more than the physician of the great Alexander.

"This pleasantry seemed to make more impression on the king than all my medical reasoning: he fell a laughing in the most pleasant and agreeable manner, and said to me, in a resolute tone, 'I will take your prescription.' He then dismissed me with–'Adieu, my good sir. You will do me pleasure to return *after dinner* at three, provided it be not inconvenient.'

"The king was, for some time, much pleased with his dandelion, though he once called it a *fiddle faddle* kind of a medicine. But Frederick, at dinner, paid little attention to those rules respecting his diet, of which he boasted so much in the morning. He first ate a large quantity of soup, composed of strong, and extremely hot ingredients; and he added to it, as usual, a large spoonful of ginger, nutmeg, and other spices. After this soup, he ate heartily of *bouilli à la Russe*, that is to say, dressed with a pint of spirits; and after this, an Italian dish, composed of the flour of Turkey corn and Parmesan cheese. To this is added the juice of garlic; it is then fried in butter, until a crust is formed upon it as thick as one's finger; and it is then seasoned with the strongest spices. This dish, invented first by Lord Marshal, and afterwards improved by the king himself, is called Polenta. In short, while boasting of the wonderful appetite

The *second stage* being marked by symptoms of slight or approaching inflammation, bitters and aromatics must be intermitted, till leeches, rubefaciants, and blisters, have in some measure reinduced the first stage, when the tonic treatment may again be cautiously commenced. As this stage is commonly a consequence of hepatic derangement, the liver must be attended to, by giving mercurials in very small doses, such as *a grain, or even half a grain of the blue pill, twice or three times a day*, with which Dr. Wilson Philip has been successful, when larger doses and all other means had failed: when these doses, small as they were, proved irritating, he combined with them hyocyamus, conium, or extract. papav. As a substitute for mercury, more powerful certainly, than his *large doses* of dandelion, he recommends the cautious use of acids externally, as recommended by Dr. Scott. The dissertation on air and exercise which follows this, however good it may be, is apparently misplaced in the arrangement, and we suggest, the propriety of altering it in his third edition.

His remarks on TRAINS OF SYMPTOMS, which affect other organs, besides those of digestion, are equally valuable. These symptoms are most common, and most distressing in the liver, and the viscera near to it, producing cough, difficulty of breathing, and hard pulse; in the heart, producing pseudo carditis; in the lower bowels, producing pain and tenderness; and in the head, producing severe or dull head-aches, sometimes conti-

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which the dandelion had given him, his majesty ended his repast by eating a whole plateful of eel-pie, which was so hot, that his companion at the table told me and my wife, *that it looked as if it had been baked in hell.*

"The effect of the king's wonderful appetite began to appear even at dinner. The good humour and cheerfulness of the morning had vanished; his majesty fell into a slumber, and convulsive motions again appeared on his countenance. When he awoke, he had some retchings; and the company left table an hour sooner than usual. I had no reason to doubt, that Frederick had already cursed me and my dandelion a hundred times. The storm, however, was much more dreadful than I expected. At three I set forward to wait upon his majesty, as I had been ordered, very much discouraged, with some degree of peevishness, and I must freely confess, with a great deal of reluctance. His looks were, indeed, terrible. In the large hollow of his cheeks, and on his lips, which were usually very beautiful and agreeable, I perceived marks of the deepest and most profound sadness. The first words which he spoke made me tremble. 'I am now,' said he to me, 'only an old carcase, fit to be thrown to the dogs.' On hearing this expression, I replied, 'Your lower belly, Sire, is at present full and distended; to-morrow, when you have had a couple of stools, your wonted gaiety will return.'

"The stomach, the belly, and the imagination, which, for what reason God only knows, depends so much on the state of the two former, had more influence over this great man than one might believe. Bad digestion rendered him extremely dejected; but when that was over his wonted vivacity immediately returned. His invincible incredulity in regard to medicine made him cry out, a miracle! when a remedy produced the least good effect; and when a physician foretold him the most trifling circumstance, he considered him as a prophet." —*Zimmermann's conversations with the late King of Prussia, a little before his death.*—London, 1791.

nuing for months, with affections of the eyes, ears, and face. These sympathetic affections, he treats on similar principles to those which we have already detailed, and need not repeat.

Upon the extensive subject of the *third stage*, Dr. Wilson Philip has been very brief. Indeed, he has done little more than reprint his admirable and well known *esquisse* on dyspeptic phthisis, as a specimen of the manner in which he could, and which, we hope, he may at no distant period be induced to treat this most important class of diseases. The field is, indeed, almost new, for though Hamilton, Abernethy, and their able followers have, as Dr. Wilson Philip has here given, most interesting and valuable glimpses into certain parts of it, yet a more extended and complete view of the influence of digestion in all diseases, is still a desideratum which nobody could supply more ably than our philosophic author.

From this brief and imperfect miniature, our readers may make some estimate of what Dr. Wilson Philip has done and what he has omitted. Amidst much that is not new, the single discovery of the mode in which digestion takes place, in that food only which is in contact with the stomach, and which after digestion is moved towards the duodenum, would alone place him in the very first rank of physiologists, and we were not a little surprised to observe an able anonymous writer almost claiming it to himself, when it is most evident, that he has not been "anticipated," but actually *instructed* in the secret by this very book on indigestion, which was open before him. (*Edin. Med. and Surg. Journ.* xvii. 590.)* Another physiological fact which Dr. Wilson Philip has stated, though perhaps, not so clearly proved, is that the chyle is chiefly formed, not from the chemical or animal change of the chyme, but from the bile and pancreatic juice constituting a considerable portion of its substance.

As a practitioner, Dr. Wilson Philip exhibits a most striking contrast, when compared with many of those who are at present celebrated. His practice is almost uniformly, mild, alterative, and what would be called timid. He never ventures upon strong, or headstrong measures. To do something which will appear to his patients striking, by violent or sudden effects on the system, and either cure, greatly debilitate, or produce death, he has not the hardihood nor the rashness to attempt. He would rather work slowly, cautiously, and surely; foiling his enemy by husbanding his strength, and tiring him out by steady persevering efforts, than by hitting right and left at hap-hazard, and run the chance of altogether missing his aim. His maxim is, that if his very small doses do little good, that little is per-

* Dr. Magendie is entitled to the credit of having "anticipated" both Dr. Philip and the writer in the Edinburgh Journal, having taught and demonstrated the same opinions to his class in 1816.—Am. Ed.

manent; and they can seldom do much injury, which cannot be said of many of the strong medicines which are now in fashion.

To keep the medium, between rashness and timidity, is certainly, however, the most judicious line of conduct. In extreme cases, it would be the summit of insipid folly to tamper with inefficient measures; while in the chronic cases chiefly treated here by Dr. Wilson Philip, we should prefer his judicious caution, to forward temerity, and his gentle alteratives, to the powerful drugs too often, most injuriously exhibited. Mr. Abernethy, who is certainly the very reverse of a timid surgeon, set the brilliant example of this mode of practice, and in spite of the illiberal opposition which its novelty excited, its merits have established it, (we cannot say permanently, but we hope) till a better shall be discovered. Another striking characteristic of Dr. Wilson Philip's investigations, arising, indeed, from the former, is his avoiding rash experiments with new or untried drugs, whose powers are either unmanageable or very difficult to regulate. We find no experiments by him with iodine, prussic acid, croton tiglium, and the numerous medicines which at present figure in experiment. Notwithstanding the charge of *cruelty* which has falsely been brought against him for his examination of *dead rabbits*, he seems to have too much humanity to sport with human life and human suffering, in the way which some dispensers of poisons, vegetable and mineral, have of late thought useful and therefore innocent. We should be the last to put a check upon improvement, by protesting against its almost only instrument experiment; but were the safe and humane model which Dr. Wilson Philip has here given, more universally followed, we have no doubt that much unnecessary suffering would be spared, and many lives saved, which now unquestionably fall victims to rash experiment, with novel medicines. Dr. Philip has also the very great merit of being wholly free from the French mania of name-coining, which threatens to deluge the science with a barbarous jargon of half Greek, half Gothic terms, often impossible to pronounce, and always unsightly when interwoven with our vernacular language. The disaster of Dr. M. Hall who nearly shipwrecked his clever book on a similar subject with the present, by coining for it, the outlandish title of an Essay on the *Mimoses*, will, we should think, be a warning to others to avoid hunting through Greek lexicons to find words for English ideas. The tide of fashion, however, is often irresistible, and even *we* ourselves are often reluctantly drawn within its vortex, and learn to talk in Greek, as may be seen in our analecta, when our English might be equally expressive. We hope, the time is not far distant, when we shall not be condemned to spend so much of our time in conning over new coined words, but shall have some leisure to learn

ideas;—when pedantry, and the frippery and parade of nomenclature will not be called science, but useful investigations in plain English, like those before us, will take their proper rank above the idle folly of mere word-knowledge and name-making.

We have heard Dr. Wilson Philip accused of writing in a diffuse, rambling, and illogical style;* which charge, we conceive, means that he writes like a gentleman and not like a pedant, who has all his knowledge in a cabinet of tables, the compartments of which have no communications. It is not so in nature, and Dr. Wilson Philip with much good sense and good taste has followed nature, rather than squared his remarks and observations to a precision of arrangement, which only exists in the brain of a closet system-builder.

Practical Remarks on Disordered States of the Cerebral Structures, occurring in Infants. By WHITLOCK NICHOLL, M. D. M. R. I. A. F. L. S. &c. &c. One vol. small octavo, pp. 94. London, 1821.

(From the Medico-Chirurgical Review, for September, 1821.)

Dr. Nicholl is an acute observer and a close reasoner—and although we think his distinctions and descriptions are too minute for general application to clinical practice by the great body of the profession, yet we believe that his observations will be acceptable to those of the higher orders of the faculty who have zeal and ability to examine and apply them.

Dr. Nicholl is perfectly correct when he observes, that consequences of a diseased state are often confounded with the causes from which they arise—a remark which is particularly applicable to affections of the cerebral structures—more especially hydrencephalus. We believe him correct in considering the effusion, in a majority of cases, as the sequela or effect of previous disease.

"There is a state or condition of the cranial brain in infants, which may be called a *state of irritation*, an *irritated state*, or, in one word, *erethism*. What this peculiar condition of the cerebral structure is, I cannot explain. It is a state, distinct from that which is called inflammation of that structure, for it may exist without any perceptible increase of the quantity of blood that flows through the cerebral blood-vessels. It is a state, under which, inordinate effects arise from ordinary impressions upon different parts of the nervous system. In its perfect form, and under a high degree of it, it is a highly sensitive condition of the cranial brain, a condition the very reverse of that under which sleep occurs. Under such a condition of the cranial

* Edinburgh Medical and Surgical Journal, ut supra.

brain, the child is wakeful, scarcely ever sleeping; it is attentive to every sound, and to every object of sight; its temper is irritable; the retina is highly sensible to light, so that the child quickly winks if its face be turned towards the window, or towards a candle; the pupil is, in many instances, more or less contracted, but this is not always the case; the limbs are much in action; the head is often moved about, or is shaken from side to side; the child cries without any apparent cause, and it is soothed only by tossing it, by carrying it about, by putting it to the breast, or by letting it suck the cheek of the nurse, or its own fingers; the secretion of tears, is, in many instances, increased, causing suffusion of the eyes, and redness of the edges of the tarsi; the secretion of the schneiderian membrane may be increased, causing a stuffed state of the nasal passages, producing sneezing, and exhibiting the appearance of that state which is, popularly, called *a cold;* the bowels are, in many cases, relaxed, yet no disordered state of the stools may appear. During such a state as I have described, there may be a degree of animation, and a quickness of observation, much beyond what are commonly met with in children of the same age. So that, although a morbid condition of the cranial brain be present, the child may be considered as particularly healthy, on account of its being wakeful and lively, and sensible to the most trifling impression. But it frequently happens, that an attentive observer may detect other symptoms; the child may start in its sleep; it may be very readily awakened; when awake, it may start at the slightest noise, as at the shutting of a door, at the moving a chair, at passing the finger over the wicker-work of its cradle, or on being slightly moved, or if touched gently; a sudden frown may pass over the forehead and may quickly disappear; the eyes may be closed irregularly, or alternately, or a winking of one eye, or frequent winking of both eyes, or a firm closing of both eyes, may be, from time to time, detected; the hand may be raised frequently to the head; the child may cry, without any evident cause, as if it were pricked with a pin; at other times, it may shriek; the fists may be clenched, the thumb being bent in, and laid flat across the palm of the hand, the fore-arms being bent upwards on the arms. Should a similar condition of the spinal brain be present, the child may be bent backwards, presenting a state of *opisthotonos;* its legs may be drawn up, while the head is thrown backwards." 13.

Such a state, Dr. N. thinks, constitutes what may be termed *sensitive erethism.* An increase of heat in the head or body may sometimes, but by no means constantly, attend this cerebral erethism.

There is another form of infantile erethism characterized by want of animation, fretfulness when roused, want of sleep, and yet "a state that can hardly be called waking," indifference to surrounding objects, pallor and chilliness of the body, rolling of the eyes, plaintive moaning or shrieking, jactitation of the hands and other minor symptoms, which our author denominates *torpid erethism.*

Scrofulous children have generally the greatest tendency to

cerebral erethism, and where this tendency exists, the slightest irritation of the nervous system will call it into action.

The etiology of this state is extensive; but among the most frequent causes are impressions on the extremities of the cerebral nerves. Hence dentition, worms, depraved visceral secretions, drastic purgatives, inactive liver, congestion of the hepatic system—"in short, whatever causes great irritation in any part of the body, whether in any of the great cavities, or on the surface of the body, may produce an erethismal condition of that brain with which the nerves of the irritated part principally communicate."

In the milder forms and earlier stages of this affection, the symptoms which it produces may be great wakefulness, great sensibility to slight impressions, with restlessness and high animation—symptoms which are generally hailed by nurses as proofs of health and vigour of the child, and consequently the disease is often overlooked. It is also often overlooked when it happens to arise during the presence of disorder of some other part, or where its assemblage of symptoms veils the true seat of the disease.

"Thus, such a condition of cerebral substance, in what way soever it arises, may produce an assemblage of symptoms to which the general term *fever* is applicable; or it may cause convulsive affections, or sundry other derangements of functions; yet our attention may be engrossed by these several effects, while the cause from which they arise is entirely overlooked." 22.

The spinal brain (as it is termed by our author) is also liable to the erethism in question, which is sometimes propagated from one brain to the other, or affects them alternately. When it exists in the spinal brain alone, the principal symptoms to which it gives rise, according to Dr. Nicholl's observations, are:—

"Restlessness; irregular and incessant movements and twitchings of the extremities; writhing of the body; hurried respiration; and irregular action of the alimentary canal." 23.

This state may be induced by injuries, vicissitudes of temperature, by impressions on the nerves of the abdominal viscera, "and especially by morbid states of the alimentary canal"—in short, from irritation of any of those nerves communicating freely with the spinal brain.

Erethismal states of the cerebral structures are not confined to infancy. They present themselves very frequently in adults, giving rise to symptoms closely resembling those observed in children.

"Irritability of temper, inability to bear the effects of the most trifling sounds, wakefulness, restlessness, febrile symptoms, the whole

train of what are called *nervous symptoms*, convulsive affections; these may, severally, be traced, in many adults, to erethismal conditions of one, or both, of the cerebral structures." 27.

As an increased circulation in the cerebral vessels tends to the production of these erethismal states, so does erethism, on the other hand, tend to increase the circulation. The two states united, our author thinks, constitutes what is termed *inflammation*—a state including erethism, of course: but erethism of the cerebral structures may exist independently of any perceptible increase of the quantity of blood in circulation. High erethism and circulation in infants, constitutes, Dr. N. imagines, acute inflammation, and less sensitive erethism, with moderate circulation, subacute inflammation. A moderate increase of circulation, with torpid form of erethism, may possibly constitute chronic inflammation.

"Inflammation of the cranial brain in infants is characterized by the following symptoms: redness of the conjunctiva; highly-contracted pupil; great intolerance of light, and of sounds; suffusion of the eyes; great restlessness; wakefulness; charged state of the blood-vessels of the head; throbbing of the arteries of the neck and head; dry, hot mouth; thirst; startlings; shriekings; hurried, unmeaning manner, and expression of countenance; pulse, throbbing, full, strong, increased in frequency." 29.

The spinal brain may also be the seat of the phlogosis; but simple *plethora* of the cerebral vessels our author characterizes by the following symptoms:—

"Increased heat of the head; a full eye; a redness of the countenance, with a want of animation; a heavy, listless state;* indisposition to move the head; uneasy sense of fulness in the head, causing the child to seek support for the head; giddiness; shaking of the head; uneasy respiration; sighing; the pupil either of a natural size, or rather dilated; sickness; loss of appetite; heat, and dryness of the mouth and skin; an inactive state of the bowels; a sensibility to impressions, but a heedlessness of them; a turgid state of the vessels of the head; the pulse not much accelerated, full, perhaps oppressed." 31.

Dr. Nicholl distinguishes a plethoric state of the veins of the head by the term *congestion;* in which state, he observes, there is general coldness of the child's body—jactitation of the head—comatose disposition—prominence and fixedness of the eyes—dilatation of the pupils—grinding of the teeth—irregular action of the facial muscles—indistinctness of vision—insensibility, more or less complete, to impressions—strabismus—

* Sic summè plethoricos sæpe invenimus debilissimos; post largam vero sanguinis missionem redeunt illicò pristinæ corpori vires. *Van Swieten, Comm.* II. 270.

torpor of bowels—scanty or suppressed secretion of urine—slow oppressed pulse—slow laborious respiration.

Irritation of the cranial nerves, as of the nerves of other structures, disposes the exhalents of the part to throw out an increased flow of fluid. When the irritation, however, is on the anti-cerebral extremities of the nerves, for instance, in the liver or other abdominal organs, the effusion may be so gradual in the cavities of the brain, as to take place to a considerable extent, without marked or decided symptoms.

We cannot follow our author through his almost endless distinctions and descriptions, and our reasons for not following him, he himself shall furnish.

"I think that I am correct in stating, that each of these conditions of the cranial brain may exist as a distinct affection, and that in the pure, uncombined, form of each of these states, each condition has distinguishing characters, by which its presence is denoted. But, when we review these various conditions, and consider how they may be blended; when we look over the list of causes from which they may severally arise, and see how many of the causes of each condition may exist at the same time; and when we take into the account, the influence which various modes of treatment have upon disease, how much they alter its features, and modify and interrupt the train of symptoms; we shall be prepared to meet with appearances very different from those which are *traced upon paper*, and we shall not be surprised at being called upon to treat cases, in which there is an assemblage of symptoms, that baffle all our attempts at classification, and defy all nosological distinctions." 56.

We are no advocates for rendering medicine so simple a science, that he who runs may read, and he who reads may easily comprehend; but we do think that an opposite extreme may be run into, and that hair-breadth differences and distinctions may be so multiplied that the *actual clinical practitioner* will be frightened from all attempts to gain information from the writings of others.

In the therapeutical portion of this little volume we found much to commend—and recommend to our junior brethren.

The most common affection of the cranial brain in infants is *erethism*—the other conditions of that organ being, in many instances, consequences of such erethism. Where there is predisposition in the child, marked by precosity of intellect, and the physical characters of scrofula—and especially where others of the family have laboured under cerebral affections, we must cautiously guard against those exciting causes of cerebral erethism, which are well known to all intelligent practitioners. The diet in particular should be attended to. Our author justly observes, that "nurses never take the digestive powers of a child into consideration, nor do they ever seem aware that the

process of digestion is necessary to convert food into aliment." When an infant is brought up by hand, it is difficult to restrain the nurse from exhibiting food of too rich quality. The stomach and duodenum become overloaded—the chyme becomes unhealthy—the liver congested—and sympathetic irritation propagated to the brain. On the other hand, it ought not to be forgotten that—

"The state of the alimentary canal in infants is much influenced by the condition of the cerebral structures. Thus, an altered state of the cranial brain may induce sickness, disordered secretion of the fluids which flow into the alimentary canal, and a relaxed, or constipated, state of the intestines. Disorder of the spinal brain may also quicken or retard the peristaltic action of the bowels." 67.

On the hepatic affections, so very common in children, Dr. N. makes many judicious remarks, but not particularly novel.

"Calomel," says he, "is given to promote the secretion of bile; it is also given where that fluid is too abundantly secreted. The mode of exhibiting it must be adapted to the particular state; in the former case, small doses of it should be given in repeated succession so as to produce the specific effects of mercury on the liver; whereas, if we want to remove from the alimentary canal an inordinate quantity of bile which has flowed into it, we should give one powerful dose, so as to produce its effects as a strong purgative." 73.

In scrofulous constitutions we should be careful, of course, in the administration of this remedy.

"In such children, if we want to promote a more copious secretion of bile, it will be more prudent to endeavour to attain that object by employing other remedies, such as nitro-muriatic acid, externally and internally, small doses of sulphate of potash with decoction of aloes, wine of aloes, or extract of taraxacum. Or if we find it necessary to employ mercury to promote the action of the liver, the mercurial pill, the grey oxide of mercury, and the hydrargyrus cum creta, are less objectionable forms of that mineral. These several means may be assisted by the warm salt bath, by friction with salt, by applying a blister over the region of the liver, and by clothing the child in flannel." 74.

Dr. N. repeats the observation of some practitioners that the stools resembling "*stewed spinach or boiled liver*," are produced by the calomel prescribed. All we can say is, that *facts* are adverse to the *theory*. We have repeatedly seen these stools where no calomel had been given, and we have seen them dislodged by scammony, jalap, and other purgatives than mercurial. But it is curious to observe how an opinion taken up by an individual, will pass current, without examination, through a whole generation of writers, and after all prove entirely without foundation. How is it, we ask, that calomel taken when a

man or child is in health, will not produce *spinach* in the intestines?

To obviate the cerebral erethism, the child should be frequently carried into the open air—"its *body* and head should be frequently sponged with cold water, and it should be immersed night and morning in *cold* or tepid water." We much question the propriety of cold water to the surface of the body when an internal organ of such vital importance as the brain is in a state of erethism. We would not prescribe such a measure ourselves; but let others do as they please.

"If the wakefulness still continues, small doses of pulv. ipecac. comp. may be given from time to time."* 78.

The pulv. ipecac. comp. may be advantageously combined with James's powder—especially in that form of the disease denominated *sub-acute* inflammation. Cold evaporating lotions to the head—cool, quiet, darkened room—elevation of the head and shoulders—diuretics of nitre, with acetate of potash and nitric ether—aperients—tepid bath—leeches to the temples, where the child is robust—lancing the gums—constitute the principal remedial measures of our author. When the disease is evidently accompanied with plethora, or, in other words, *inflammation* of the brain, local bleeding from the head, or even general blood letting, must be carried to a greater extent than in simple erethism. Besides the means already pointed out—

"The bowels must be purged by calomel and saline purgatives, after which, James's powder combined with calomel and nitre may be given in repeated doses. The child must be kept in a quiet, darkened room, free from noise and disturbance.

"It may happen, when an inflammatory state of the cranial brain has existed, that the remedies made use of may remove the plethoric state of the cerebral blood-vessels, while an erethismal state of the brain yet remains. In such cases, it will be proper to give the pulvis ipecac. comp. in repeated doses, combined with James's powder and nitre, to which small doses of calomel, or of the hydrarg. cum creta, may be added, and the other rules laid down for the treatment of erethism of the cranial brain must be strictly attended to, as long as that state continues; for if the erethismal state of that organ be not allayed, the child will continue wakeful, restless, and irritable; and we may expect, that the plethoric state of the cerebral

* "The dose of the opiate must be regulated by its effect. In treating erethismal states of the cerebral structures with opiates, we must recollect that opium produces opposite effects in different cases, and in different doses. Opium may allay irritation of these structures, it may produce complete torpor of them, or it may act upon them as a stimulant. Our object in exhibiting opium in erethismal states must be, to allay irritation, we must therefore so administer it as to produce this effect, and this end will be best attained by giving the pulv. ipecac. comp. in small repeated doses. This is a point too often overlooked."

blood-vessels will, sooner or later, return; and that the child will, at length, be worn out, or permanent mischief may be established. And if, after all the marked appearances which indicate the existence of an erethismal state, have vanished, the child is wakeful, or very irritable, we must still procure rest, and allay irritation, by repeated doses of the Dover's powder, in such quantities, and at such times, as may be requisite; recollecting, that there still exists a tendency to the revival of an erethismal condition of the cranial brain, which circumstances, apparently trifling, such as the long continued absence of sleep; any error of diet; an unhealthy condition of the alimentary canal, or of the liver; or any irritation;—may suddenly call into action." 85.

We have much overstepped the boundaries within which we meant to confine the analysis of this little volume. If we have differed with the author on some few points, and if we have thought him disposed to too much refinement, both in symptomatology and pathology, we have not ceased to admire his zeal, and respect his talents. We have no doubt but that Dr. Nicholl will contribute much to the advancement of medical science, and stand conspicuous among its present cultivators.

A Treatise on the Diseases of the Nervous System. Part I.; comprising, Convulsive and Maniacal Affections. By J. C. PRICHARD, M. D., &c. London, 1822. pp. 425.

(Quarterly Journal of Foreign Medicine and Surgery for Jan. 1822.)

Before we proceed to Dr. Prichard's good things, we shall, as we are very friendly to him, exercise the highest privilege of friendship—to tell him some of his faults. We object then, at the outset, to the greater part of his theoretical discussions; not only as of little utility to the practitioner, and of less to support his own judicious practice; but as often unsound, and far from being intelligible, when considered merely in the light of philosophical disquisitions. Such may do very well to amuse his leisure hours of speculation on the Physical History of Man;* or when he is tired of Jablonski and Bryant and the hieroglyphics, may afford an agreeable variety to his Egyptian researches;† but in a practical work on diseases, such exercises of a philosophical fancy are sadly out of place, and the purchaser looks upon them, as nothing but useless lumber, among which he has to search and dig, for the only thing which he cares for —*practical facts*. It indeed appears to us, that as far as his theories are just, he has illustrated them only by known com-

* Researches into the Physical History of Man. By J. C. Prichard, M. D. &c. 8vo. 1813.

† See the Author's Work on Egyptian Mythology.

mon places; and when he attempts to step out of the common road, he very often goes astray. *Pathemata*, indeed, is a very fine word, but its only use, we conceive, is to screen ignorance, and make us fancy that we know what we do not know. We should, therefore, advise Dr. Prichard, as the greatest improvement he could make, to leave out the whole of his theory in his forthcoming new edition; and supply the chasm out of the ample store of interesting cases, which we infer, from the specimens here given, he must still possess.

Another of Dr. Prichard's prominent faults, is the indistinct and involved arrangement which he has adopted. It is probable, his theory led him into the labyrinth; but be this as it may, we are certain, he would require the aid of his Egyptian friend, Hermes Trismegistus, and even of Isis and Osiris to unravel it. In our analysis, we shall follow a more obvious and simple outline; and we shall also avoid, as much as we can, the professional slang, in which Dr. Prichard occasionally revels, though we marvel how a man of taste like him, who quotes Shakspeare, and Greek epigrams, should mar the clearness of his statements by borrowing such terms as *Leipothymia*, *Juvantia*, *Laedentia*, *&c.*, even from Sauvages, or Dr. Gregory.

But we must go on to what is practical in the book, and of this we think very favourably. His cases are particularly instructive and valuable, and full of acute observation, and accurate detail, while his practice is for the most part sound, and unexceptionable. We are, indeed, sorry that we can afford so little space to this article, otherwise, we should have treated our readers with a more ample selection from these interesting cases; but we shall give the principles of his practice, and for the more minute details, we must refer to the work itself.

EPILEPSY.

The more common form of epilepsy, is attended by sudden fits, total or partial loss of sense, or consciousness, and a convulsive agitation of the voluntary muscles of the whole frame. In the form of disease, resembling tetanus, which is less frequent, there are sudden fits of coma, without convulsion, but with what may be called a tonic spasm of the muscles, which become rigid and inflexible. There is a third form, which is akin to apoplexy; in which the muscles are relaxed, and the patient lies in a state resembling sleep, with the pulse as in syncope. This Dr. Prichard is disposed to call *Leipothymia*.

There is sometimes, a remarkable approach to hysteria—a distressing sense of inflation in the præcordia, for example, difficult respiration, palpitation, borborigmus, the feeling of a ball rising from the stomach to the throat occasioning a sense of

constriction, accompanied with frequent micturition of pale urine; all of which symptoms of hysteria, occur in cases of genuine epilepsy.

Those symptoms, reckoned the most uniform, are sometimes wanting—such as *the convulsions, and the subsequent stupor. Even the insensibility during the fit, is occasionally absent*, and this is regarded by Sauvages and Dr. Ferriar, as a characteristic of uterine epilepsy, but Dr. Prichard's experience is at variance with this. There seems to be a peculiarity in the state of the brain during sleep, which favours epilepsy. One patient of Dr. Prichard's, was almost sure to be seized a few minutes after falling asleep. He was a young labourer, rather of the apoplectic make, and had enjoyed good health till two years before, when he was suddenly awaked in the night by a spasmodic action of the muscles of the left shoulder, violently extending the arm, and drawing the head down to the shoulder: the whole muscular system was next affected. He attributed his complaint to his falling from a wagon on his shoulder. If he dozed but a few minutes during the day, a fit would seize him. The treatment which was recommended, only served to reduce his strength.

We know a gentleman of nervous temperament, who almost regularly after he has slept for five or ten minutes, awakes with starting, often slight, but sometimes violent,—rarely like nightmare. This brief fit passes off, and he sleeps soundly for the remainder of the night. He never had any thing like epilepsy, or somnambulism.

The fit of epilepsy, is sometimes accompanied with a raving delirium, as described by Dr. Mead; more rarely with somnambulism:—occasionally it ends fatally, one paroxysm rapidly succeeding another, so that the patient expires under their violence, or dies of subsequent coma: or it may terminate in palsy, mania, or idiotism.

The immediate CAUSE of an attack of epilepsy, is, according to Dr Prichard, a preternatural flow of blood into the vessels of the brain, or a morbid distention and fulness in some of its vessels; and may arise from direct injury of the head; from suppression of discharges, such as the catamenia, or issues; from cold, particularly in the feet; from violent heat as in crowded assemblies; or from whatever produces too great determination of blood to the head.

This is inferred from the reciprocal conversion of nervous disorders, and their ascertained dependance on such a state of the circulation;—from circumstances giving rise to epilepsy, which evidently produce plethora, or an inflamed state of the brain: amongst the causes of which, are reckoned dentition, violent fits of coughing, and violent emotion. Muscular ex-

ertion, we would remark, seldom of itself produces epilepsy, because the motion of the blood, through the veins, is also accelerated by the pressure of the muscles; though this becomes a cause, when assisted by other circumstances. We have had under our care a patient, who attributed his complaints to hard labour, in sawing timber; but he confessed that he had been in the habit of drinking porter very freely, accompanied with the use of tobacco, which, as probably were the cause of the disease as the one which he assigned.

The beating of the carotid arteries, and the flushed state of the face during the fit, still more strongly prove the assigned cause to be just. The proof becomes stronger still on DISSECTING those who are carried off by a fit; in which case we find the brain red and turgid with blood, or serum effused into the ventricles; and sometimes organic diseases of different sorts in its structure, such as tumours, adhesions, ulcers, &c. But it must be confessed, that the brain is sometimes, though seldom, found quite healthy. To illustrate these causes a case is given of a girl aged nine, who had fits of tetanic epilepsy, induced by hooping-cough, which fits troubled her during four months. Some time after, she was seized with partial paralysis of the right side; and subsequently with involuntary startings of the limbs of the same side. She took half a drachm of the oil of turpentine three times a day, and a fortnight after was much better, but had occasionally fits of vertigo. Under the use of the medicine, her limbs gained strength when she was seized with headache, and slight delirium. Leeches applied to the temples, and a blister, removed this latter affection, and she left the hospital free of complaint.

The apparent transition in this case, of epilepsy into vertigo, cannot, it is evident, be depended upon, as the vertigo might with more propriety, be imputed to the turpentine. In another case, which ended fatally, the lungs were found so gorged with blood, as to appear a sufficient cause of death; but the real cause was an extravasation of blood, by which the brain itself was lacerated. This shows the natural influence which subsists between the brain, and the respiratory system.

The TREATMENT of epilepsy is modified according to the causes supposed to produce it, but in all cases Dr. Prichard keeps the state of the vascular system of the brain steadily in view, and general and local blood-letting is prescribed, often to a very considerable extent. Purging, especially with the oil of turpentine, in doses of half a drachm to two drachms three times a day. Blisters, applied chiefly to the back of the neck, cold affusion, saline and antimonial mixtures, and the whole of the antiphlogistic regimen. We should much suspect that indiscriminate depletion, and reducing the system upon the faith of

the assigned immediate causes, could frequently lead to very injurious treatment. Blood-letting, and purgatives, and vegetable diet, may do very well with plethoric patients; but, though such constitute, according to Dr. Prichard, a large proportion of those who are afflicted with the disease, he should certainly have taken into consideration the case of the debilitated, as well as that of the plethoric.

The SYMPTOMS OF UTERINE EPILEPSY do not differ remarkably from those of common epilepsy, and are chiefly distinguished by the fits preserving the regular periods of menstruation, and not, as Sauvages says, by the sex of the patient,—because females have also the other forms of the disease; nor by hysteric symptoms, nor the absence of insensibility, as he likewise affirms. Fits sometimes commence with the aura epileptica—at other times headache, pulsation of the carotids, and vertigo precede.

The CAUSES of this disease are referred in a great measure to action of the blood, diverted from the uterus to the brain. In supporting an ingenious theory of particular determinations of blood, our author remarks, that without such determinations the functions necessary for the preservation and maintenance of the species could not be carried on. The fœtus could not be developed, the uterus would remain unchanged, and the mammary glands could not become enlarged. Hence, he infers, that particular determinations of blood are not incidental or insulated phenomena, but have certain relations to the general state of the animal economy; and that the equilibrium of the system, producing them is liable to partial disorders, so that they become at times pernicious.

In addition to this, if the flow of blood produced by such a determination is suddenly checked, there must either be some outlet substituted, or a morbid determination must, cæteris paribus, follow. The constitution, in the language of our author, is subjected to a sort of tumultuous action, irregular efforts take place, and disorders are induced in various functions, but no part of the constitution is assaulted more generally than the nervous fabric.

Those who are most subject to this disorder, are young females of the sanguine temperament, having fair and ruddy complexions, sandy hair, light eyes, and a delicate and irritable constitution. It appears about the age when the catamenia commence or soon after, and often makes its attack when their recurrence is prevented, or when menstruation is suppressed by exposure to cold—it takes place also after menstruation has been imperfectly and with difficulty effected, or where it has altogether failed at the proper age to make its appearance, in which case the disorder will generally continue, until the functions of the uterine system display themselves.

These remarks are illustrated by numerous cases, which constitute a valuable accession to practical medicine. In the following one the connexion of the fits with defective menstruation is clearly evinced, as also the influence of blood-letting in the flow of the catamenia. A girl of sanguine complexion, aged 18, about two years ago, had fits, which came on almost daily, but ceased on the appearance of the catamenia, although this discharge was more scanty than usual. About six months ago the epileptic fits returned, the last took place two days after the cessation of the menses, the bowels were constipated, the pulse frequent, and strong, and the tongue white—she had also severe pain in the occiput. After losing a pound of blood—having a blister applied to the neck, and taking opening medicines, the severity of the headache was mitigated. The bleeding was repeated and the purgatives continued, and in about a week after, she had little complaint, except a pain in the forepart of the head, which was relieved by leeches. After this she was affected with globus hystericus, but had no return of fits. During the next fortnight, the pulse being frequent, she was twice bled, when the catamenia returned in a scanty degree, accompanied with pains in the head and giddiness, for which blisters and leeches were applied. After this treatment she had twice returns of the catamenia, but having much pain in the temples and vertigo, a seton was inserted in the neck, and she took a laxative antimonial mixture. As soon as the discharge from the seton became free, the pain of the forehead was diminished, and the vertigo removed. The menses again returned, although scanty, and also the pain of the forehead—she was again bled, soon after which the catamenia flowed naturally, and she was almost well. She was now discharged, but suffered afterwards relapse of the pain and sweatings, but not of the fits. The same remedies, with the addition of the warm bath restored her, and she was again discharged in a much improved state of health.

The TREATMENT of this disease is modified according to the circumstances of the uterine functions, from which it proceeds. In total suppressions, the morbid nervous symptoms are conceived to arise from the efforts of the system, to establish the natural discharge. The indication is, to relieve the morbid determination to the head by bleeding. This, when a decided effect is wanted, should be performed while the patient is sitting up, and the trunk supported in an erect position, until syncope threaten. When it is requisite to repeat the bleeding, it may be usefully accompanied by the hip bath of 96 or 98 degrees, or by merely bathing the feet. We cannot impress the utility of this practice too strongly on our readers, particularly as we happen to know, that a very opposite practice is followed by practi-

tioners, who, thinking to strengthen the system, prescribe the cold bath *which can only aggravate the complaint, till the cause of the debility be once fairly removed.* We have known much injury done from this mistake. We question very much, however, the propriety of making the patient remain in the bath, till she begins to be fatigued and exhausted. The antiphlogistic regimen, of course, will assist in fulfilling this indication, though it ought to be persisted in with caution. The restoration of the natural discharge is frequently accomplished by this use of the lancet—the flow of the menses sometimes following very speedily upon the loss of blood. Stimulating clysters also have a strong exciting power on the vessels of the uterus. An excellent enema for this purpose, is composed of an ounce of the oil of turpentine, and an ounce of castor oil. Emenagogues also are mentioned, amongst which the oleum terebinthinæ is esteemed the most powerful, the tincture of melampodium, and the pulvis sabinæ are sometimes efficacious, though these are not so strong as the turpentine. In order to render the constitution less liable to returns of amenorrhœa, and the accompanying symptoms of uterine epilepsy,—spare diet, exercise, change of air, gentle laxatives, setons inserted into the nape of the neck, or issues on the sacrum, or above the knees, are chiefly recommended.

In dysmenorrhæa moderate bleedings are prescribed, if any flow is existing, syncope is to be avoided—the use of the warm bath, and the other remedies as prescribed in cases attended with amenorrhœa. The effects of the warm bath, are increased by friction in the bath with flannel on the back, loins, and abdomen, and are afterwards maintained by fomentations of the feet and lower part of the abdomen, and draughts of diluent fluids.

ENTERIC EPILEPSY may take place at every period of life, but, like other forms of the disease is not so incident to the old as to the young. The SYMPTOMS are such as denote disorder in the functions of the stomach and the intestinal canal, namely, obstinate constipation, or constipation alternating with diarrhœa, evacuations showing unhealthy secretions and imperfect digestion, appetite variable and capricious, frequently unnaturally craving. The tongue is furred, and the skin sometimes covered with eruptions. The attack is often preceded by constant stupor, drowsiness, headache, dilatation of the pupils and vertigo. In children the CAUSES OF THIS disease are for the most part dentition, producing disordered bowels. Both in children and adults, worms, especially the tape worm, from the irritation and the vitiated secretions which they produce in the alimentary canal, are a frequent cause of epilepsy.

The chief indication in the TREATMENT is to remove the dis-

order in the bowels, relieving in the mean time, if requisite, the affection of the head, by unloading it of superabundant blood. Our author often commences by prescribing five or six grains of calomel, with one, two, or three of tartarized antimony; other purgatives and emetics are also liberally administered, and in obstinate constipation the injection of oil of turpentine is resorted to, aided by the relaxing influence of the warm bath. In protracted cases little can be done by cathartic medicines. A long continued diarrhœa exhausts the strength of the patient, and evacuates the intestinal canal of its more solid contents. A morbid secretion keeps up the irritation in the system; and a depraved appetite, a feeling of emptiness, or sinking with a perpetual craving, induce the patient to fill his stomach with unwholesome substances. Flatulence, and eructations, a sallow countenance, a foul tongue, and reddened fauces, are indications of this second and often very obstinate stage of the disease. In such cases, a few doses of calomel are recommended to evacuate the diseased contents of the bowels, followed by rhubarb and magnesia; also the compound decoction of aloes three times a day, with half a drachm of the carbonate of soda.

In this, however, as well as in most other cases, the oil of turpentine is still the favourite remedy. The best mode of administering it is in emulsion, prepared by diffusing the oil by means of honey, or mucilage in some strong aromatic water—half an ounce of this, containing half a drachm of the oil, is usually ordered to be taken three times a day in a cupful of milk. Dr. Prichard has not much confidence in the argentum nitratum, nor in any of the metallic oxides, although it is in this species of epilepsy, that he imagines they will be most likely to prove beneficial. The good effects of the oil of turpentine, are exemplified in the following case.

A girl of pallid complexion, aged 11, was seized with fits ten weeks ago, of which she had several during the day. At first she was convulsed during the fits, but now they have the character of uterine epilepsy. Pulsation full, abdomen tumid, bowels irregular. Her fits were stopped a fortnight ago by cathartics, and a drachm of the oleum terebinth. every night, but the disorder returned. Six ounces of blood were now withdrawn, and cathartics ordered, which were continued for six days, during each of which she had a fit. Half a drachm of the oil of turpentine was now ordered three times a day, and the cold affusion every morning. From this period the fits immediately ceased and did not recur. On this medicine disagreeing with her stomach, the dose was diminished to twenty drops,—afterwards increased to twenty-five, which she continued for a month:—she remains free from the complaint.

The origin of EPILEPSY FROM DISEASE OF THE LIVER, is less obvious than that from the uterus, or alimentary canal. It has, however, happened several times to Dr. Prichard to witness cases of epilepsy, in which on examination, the symptoms, which point out active inflammation, or those of chronic disease of the larger viscera, and particularly of the liver, were discernible. The REMEDIES adopted to remove the disease of the viscera, if successful, remove at the same time, or alleviate, the epileptic affection. From this it is inferred, that there is a connexion existing between the morbid state of the viscera, and that state of the brain which gives rise to epilepsy. The treatment is founded on the same principles as in the preceding varieties.

MADNESS.

The detail of the SYMPTOMS presents to us nothing worthy of remark. The history of this disease, like that already given of epilepsy, is accurate and comprehensive, and much discrimination is evinced in selecting and grouping those trains of symptoms, which lead to important views regarding its origin. In his considerations of the origin of this affection, he excludes from sharing in it certain intellectual phenomena, such as sensation, perception, and judgment, and confines the aberration to memory and imagination, conceiving that that feature which most distinguishes the lunatic, is a habit of mistaking the ideas of reverie for impressions of memory. When the maniacal hallucination becomes exalted to a very intense degree, it represents unreal objects as actually present; and some particular phantasms the creations of reverie or imagination, are presented to the mind in such vivid colours, as to produce a similar effect to that of actual perception—the patient in other respects making no mistake with regard either to place or time.

Certain changes in the configuration of the cerebral structure, being conceived by our author to precede, or take place in connexion with every individual perception of mind, it is inferred that the impressions of memory are also preceded or accompanied by an organic operation, in some degree similar to that through the agency of which the idea was originally presented to the mind. It is next inferred that organic operations occur likewise in imagination or reverie, and that such are merely modifications of those of memory. In a diseased state of the brain, the distinction between them is conceived to be abolished, and hence the mistake which the maniac falls into of regarding the impressions of reverie as those of memory.

The brain on DISSECTION of maniacs is found to exhibit the same vascular fulness and appearances of the effect of inflamma-

tory action, as is found in those who die of apoplexy, and other nervous diseases.

The SYMPTOMS of UTERINE MANIA are irregularity in the returns, and a slow, scanty, and laborious flow of menstruation, great affection of the animal spirits, often assuming the character of hysteria—in other instances, maniacal impressions, unusual vehemence of feeling, and of expression, arising from too vivid impressions on the fancy. The CAUSES are, suppression of the catamenia from cold, over excitement, or powerful mental emotion, and irregular and difficult menstruation.

In the TREATMENT of uterine mania, more may be expected from stimulating emenagogues than in uterine epilepsy. Bleeding is not requisite, nor safe, to a large extent; although in some cases a considerable loss of blood, with the aid of the warm bath, walking exercise, &c. have removed the disease by restoring the natural functions. The treatment in other respects resembles that of uterine epilepsy.

In ENTERIC MANIA the SYMPTOMS are obstinate constipation; six, seven, and eight days frequently passing without any alvine discharge. The fæces often like coffee grounds, or chopped straw; not unfrequently of a dirty colour, and consisting for the most part of indurated bile, and marked by extreme fœtor. Sometimes great torpor has been succeeded by diarrhœa, so that on inquiry the bowels are reported to be loose; this augments the evil. The abdomen, previously distended by indurated fæces, is now additionally swelled with flatulence, the load of solid contents being but partially discharged; sharp pains are felt in the abdomen, and there are marked symptoms of flatulence; dysentery, or hectic, at last frequently carries off the patient. The fauces and velum pendulum are red, with the vessels injected, and they are also covered with patches of mucus; the tongue is red, often with white streaks intermixed, when diarrhœa exists it is covered with a brownish hue. The mouth is viscid, and the patient generally spits out a frothy slime; ardent thirst also exists, and a peculiar fœtor of the breath, and of the whole person. The skin is clammy and cold. In cases of long duration there are scaly eruptions, and in debilitated subjects, furunculæ which are disposed to slough; the complexion is flushed; the eyes wild and glossy, with inflamed tunica conjunctiva, and the pupils contracted: the urine is scanty and high coloured and contains fœcal matter; the pulse is rapid and irritable, and the carotids especially, beat with unusual force; the patient is sleepless, irritable, and tremulous.

The CAUSES of this disease and the manner in which the brain comes to share in the diseased affection of the alimentary canal are not easily discovered.

The TREATMENT is directed to what is considered the primary affection: the bowels are purged with cathartic medicines in as powerful doses as the patient can bear, and continued until the full effect takes place. Purgative enemas also are used containing oil of turpentine and castor oil. General bleeding is not required in many cases, only when there are symptoms approaching to inflammation of the brain; such as raving delirium, a bounding pulse, especially in the carotids—flushed countenance, reddened eyes, dry tongue, heated scalp, and intense thirst. The remaining remedies are the same as those used in enteric epilepsy.

Diseases of the viscera, especially of those lying under the hypochondria, have, from the earliest times been supposed to have great influence on the mind and animal spirits; but Dr. Cheyne was the first who pointed out the conjunction sometimes met with in dissection of HEPATIC DISEASE and MANIA. Instances of such union of disease have not frequently occurred to our author, though he gives a case, in which on dissection there was found organic disease, both of the liver and brain, the combination of which he was not disposed to believe accidental.

Our author subsequently treats of cerebral disease giving rise to epilepsy and mania, whether they may have arisen from wounds, or narcotic substances, or mental emotions. In his remarks on the treatment there is one which we think cannot be too much attended to, namely, that morbid determinations to the head as well as to other parts often co-exist with a very defective degree of vigour in the general state of the circulation, and with an exhausted, or debilitated constitution. In such cases the general health and vigour of the constitution must be promoted, while at the same time the congestion in the brain is relieved by topical evacuations, and the other usual means. In some cases the indications of cure are to strengthen the habit and to relieve the local determinations. Issues and other drains are particularly recommended. For the varieties in the treatment, and for the numerous excellent observations in this, and the preceding part of the book, we must refer the reader to the work itself; as also for the original views he has brought forward on the nature of local convulsion, somnambulism, and ecstasis.

We are sorry that our limited space forbids us to enter at greater length into the masterly practical observations of Dr. Prichard, and we must make the same apology for passing over his numerous and instructive cases, in which we found every thing to praise, and very little to blame. His theory we also pass over, though we had noted during the perusal of it, many passages for remark, and had even embodied these in a disserta-

tion of some length; but for such speculations we fear our readers would owe us but small thanks. Those who are interested in the metaphysical questions respecting the influence of mental manifestations on the cerebral functions and organization and reciprocally; with the discussion whether the will is intelligent, or merely a blind instinct—we must refer to the original work. We expect the second part with some anxiety, though we fear that the ample favours which fortune is reported to have lately conferred on the author, may put upon his future exertions the deadening spell which so usually and so mischievously accompanies them. Omen Deus avertat:—we have so few medical authors like Dr. Prichard, that we can ill afford to spare him—and that in the very dawn of his celebrity, as an original, a practical, and (what is still higher praise,) a useful writer.

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1. *Analyse Chimique des Quinquinas.* Par MM. PELLETIER et CAVENTOU. à Paris, 1821. pp. 88.

2. *Formulaire pour la Preparation et l'Emploi de plusieurs Nouveaux Medicamens.* Par F. MAGENDIE. à Paris, 1821. pp. 84.

(Edinburgh Medical and Surgical Journal for January, 1822.)

Under these titles we propose to embrace a general account of all that has yet been published concerning a highly interesting class of substances, for the discovery of which we are indebted chiefly to the labours of the French chemists; and we do so the more willingly, because no such account has yet been given in any domestic publication. We allude to the vegetable alkalis.

It is not altogether clear to whom we are indebted for the first idea of the existence of an alkaline principle, composed of the usual elements of vegetable matter. In 1803, M. Derosne* procured a crystalline substance from opium, which dissolved in acids; but he did not determine its nature or properties. In 1804, Seguin† observed another crystalline substance in that drug; and read a memoir before the French Institute, containing a relation of almost all its properties as they are now known to chemists; but, although he even noticed its influence on the vegetable colours, he did not pronounce it to be an alkali. Sertuerner of Eimbeck, in Hanover,‡ pursuing the same researches about the same time as Derosne, procured both this principle and that observed by Seguin. In 1817, he improved and republished his experiments, and was then the first who unequivocally proclaimed the existence of a vegetable alkali. It was

* Ann. de Chimie, Vol. 45. † Ann. de Chimie, Vol. 92.
‡ Ann. de Chim. et de Phys. t. v.

the essential salt noticed by Seguin, now known by the name of Morphia. Since that time, many of our most energetic drugs have been submitted to analysis by the French and German chemists; and the result is, that almost every active substance hitherto examined has yielded a peculiar principle, approaching more or less to the nature of an alkali, and possessed in a high degree of the physiological properties of the vegetable from which it has been procured.

The principles already discovered are, *Morphia*, from Opium; *Strychnia*, from the nut of the Strychnos nux vomica, S. ignatia, and S. colubrina; *Brucia*, from the bark of the Brucea antidysenterica, (false angustura bark); *Cinchonia*, from the bark of the Cinchona condaminea, C. oblongifolia, and Portlandia hexandra, (Carthagena bark); *Kina*, from the Cinchona cordifolia, C. oblongifolia, and Portlandia hexandra; *Veratra*, from the Veratrum album, V. sabadilla, and Colchicum autumnale; *Emeta*, from the callicocca ipecacuanha; *Delphia*, from the Delphinium staphisagria; *Picrotoxa*, from the Menispermum cocculus; *Solana*, from the Solanum nigrum and S. dulcamara; and *Gentiania*,* from the Gentiana lutea. Besides these, others have been announced as residing in the Daphne alpina, Atropa Belladonna, Hyoscyamus, Aconitum, Stramonium, Capsicum, Senna, and Piper nigrum. In short, it is probable that careful examination will detect an analogous principle in almost every compound vegetable drug.

Of those which we have enumerated, however, several will probably be afterwards found to be merely disguised modifications of each other. It is very probable, for instance, that Kina and Cinchonia are varieties of one alkali. We are likewise possessed of facts which tend to associate Strychnia and Brucia under one principle; but our experiments must be repeated and corroborated before we can venture to give a more decided opinion. Meanwhile, we may venture to suggest to those engaged in this interesting department of analysis, that Chemistry would be more benefited, and perhaps even their own claims enhanced, if they were to connect as much as possible the alkalis of vegetables yet to be examined with the principles already discovered in genera having an analogous action on the animal economy. At all events, on discovering a well defined new principle, no pains should be spared to trace it, not only in the other species of the same genus, but also in all other genera of similar physiological properties. There is even a be-

* The terminations of these names are conformable with what has been already adopted for some of them by several domestic contemporary Journals of Chemistry. Some of them, such as Emeta and Picrotoxa, might be advantageously changed for names derived from the plants which yield them. But this is not our province.

lief prevalent among the discoverers themselves, that all those principles are merely varieties of one alkali, differently modified in each by certain other principles;—an idea which is founded on the very small quantity of acid requisite to neutralize them. This opinion our present imperfect knowledge allows us only to mention; yet we may remark, that, the existence of one vegetable alkali being proved, there is no reason why there should not be as many more as there are vegetable acids.

They are all prepared nearly in the same manner. At first, they were procured by precipitating them by ammonia from the aqueous infusion of the plant; but M. Robiquet afterwards improved the process by substituting magnesia. The first object, therefore, is to procure this infusion, which, for some, is done by simple maceration. For others, it is necessary to prepare previously an alcoholic extract, and for others it is proper, first of all, to remove the fatty matter by the action of ether. Sometimes it is requisite to remove the colouring matter from this infusion by the action of subacetate of lead, followed by that of sulphuretted hydrogen, to precipitate the excess of lead. The aqueous infusion, whether simple or so prepared, is then boiled with a small quantity of magnesia, which unites with the acid, holding the alkali in solution. The alkali being thus precipitated, is found mixed with the excess of magnesia, an insoluble salt of that earth, and a quantity of colouring, extractive, or resinoid matter. The precipitate being separated and boiled in alcohol, we obtain a dark-coloured solution, in which the alkali crystallizes on cooling, the resinoid matter from its greater solubility remaining behind. The crystals are still tinged with this resinoid matter; but they are rendered pure by redissolving them in alcohol, boiling with animal charcoal, and crystallizing them anew; different manipulations of less consequence are employed for each.

In general, the vegetable alkalis assume more or less of a crystalline appearance. Kina, veratra, brucia, emeta, delphia and solana, have not yet been regularly crystallized; strychnia and picrotoxa crystallize in quadrangular prisms; cinchonia and gentiania in needles too minute to be distinctly surveyed; morphia in quadrangular prisms according to Thomson, in single and double quadrangular pyramids according to Choulant and Sertuerner, and in slightly flattened hexangular prisms according to all the specimens which we have ourselves prepared, or have procured from the Parisian *pharmaciens*.

Their colour is white; gentiania alone is yellow, and this perhaps arises from impurities. Commonly they have more or less of a pearly lustre. They are all inodorous. Their taste is generally bitter in various degrees. That of strychnia, brucia and picrotoxa, is most insupportable and lasting. Indeed,

that of strychnia is probably the most powerful of tastes; it is perceptible when a grain is dissolved in eighty pounds of water.*

They are not altered by air or light. They are decomposed by a moderate heat; most of them previously melt, some at a temperature inferior to 212°., others not till they are about to be decomposed. The principle of hyoscyamus is said to resist a low red heat. Analyzed by the deutoxide of copper, they yield carbon, hydrogen and oxygen; but no azote, unless they have been prepared by precipitation with ammonia.

Their solubility in water is very small, but is rendered in general greater by the presence of the colouring or resinoid matter. All, or nearly all, are very soluble in alcohol. Ether readily dissolves delphia, veratra, kina, emeta, and gentiania; but morphia, cinchonia and picrotoxa, are very sparingly soluble; and brucia and strychnia are nearly insoluble.

Excepting gentiania, they all restore the vegetable blues previously reddened by an acid; some of them, such as morphia and delphia, tinge turmeric and violets.

They combine with the acids. In general, they form neutral salts; but it appears that veratra, emeta, and perhaps also picrotoxa and delphia, always unite with an excess of acid. All the combinations with the mineral acids, excepting the salts of picrotoxa, are exceedingly soluble in water; and, with the exception of the nitrate of cinchonia, and all the salts of veratra, they are crystallizable. The acetates too are in general soluble, though not always, and they are disposed to form supersalts. All the oxalates, except of picrotoxa, and all the tartrates are rather insoluble, and have likewise a tendency to unite with an excess of acid. The oxalate of picrotoxa is the most soluble of its salts. The gallates of cinchonia and kina are very insoluble, a fact which explains the effect of the infusion of galls on their solutions. There is no particular phenomenon in the action of most of the acids when they form those combinations. That of concentrated nitric acid, however, is sometimes very peculiar. It converts the greater number into artificial tannin; but it seems to peroxidate morphia, strychnia, and brucia, rendering them less powerful as salifiable bases, and diminishing or destroying their action on the animal economy. It is very remarkable too, that the products, so formed, are restored to their original condition by proto-hydrochlorate of tin, sulphuretted hydrogen, and other disoxygenating substances. In general, these alkaline principles act upon iodine and chlorine in the same manner as the ordinary alkalis, that is, the water is decomposed, and the oxacids and hydracids so formed, enter each into com-

* Ann. de Chim. et de Phys. x. 153.

bination with a portion of the salifiable base. Chloric acid seems to have a tendency to act on strychnia in the same manner as nitric acid.

All the salts of the vegetable alkalis are decomposed by ammonia. Their order of affinity, in relation to each other, as derived from the proportions in which they unite with acids, is laid down in the following Table of the quantities of sulphuric and hydrochloric acids, which combine with 100 parts of each base:

	Cinchonia	*Morphia.*	*Picrotoxa.*	*Kina.*	*Strychnia*	*Brucia.*	*Veratra.*
Sulphuric	13.02	12.46	11.11	10.91	10.48	9.67	6.64
Hydrochl.	9.03	8.62		7.08	7.61	6.63	4.32

We have not yet received a detailed account of the salts of the other alkalis. It appears, however, that atropia exerts a greater neutralizing power than any other of them; its sulphate consisting of 38.93 base, 36.52 acid, and 24.55 water of crystallization.

In their natural state, they commonly exist in combination with peculiar acids; a few of them are found in the state of malates.

When we survey this general view of their chemical properties, it is apparent that their title to the name of alkali is sufficiently distinct. They restore colours altered by acids; their action with chlorine and iodine is the same as that of the acknowledged alkalis; and, in uniting with acids, they form for the most part neutral and crystallizable salts. Nor ought we to omit, in this enumeration, the property which some of them possess, of combining with an additional quantity of oxygen, so as to form peroxides.

The vegetable alkalis are endowed with a powerful influence upon the animal economy; and it is a law hitherto universal, that they concentrate in themselves all the physiological properties of the vegetables to which they belong. It is worthy of remark, however, that, although their effect is much greater than that of the undecomposed vegetables, the same quantity of alkali is not so powerful in its pure form, as in its natural state of combination. Thus, six grains of morphia produce no more effect than six grains of the watery extract of opium, which are equivalent to 12 grains of the opium itself; yet, in these 12 grains, there is not above a sixteenth part of morphia. The acids render their action much more energetic, chiefly, or perhaps solely, by increasing their solubility. Alcohol, and in general fixed oil, have the same effect. Those of them which act as poisons, namely, all but gentiania, cinchonia, and kina, show

their agency in whatsoever manner they are introduced into the system; and, like the vegetable poisons in their ordinary state, they act more forcibly on the serous membranes than upon the stomach, and more violently still, when they are introduced into the cellular tissue, or directly into the veins. It is not improbable that this difference is owing to their being, in part, decomposed by the processes of absorption and digestion. Most of the poisonous alkalis, especially those yielded by narcotic plants, seem to exert their influence on the nervous system, through the medium of absorption. But others (and even some of the narcotic alkalis when given in small doses) produce their fatal effect more slowly, by inducing inflammation of the intestinal canal.

All observers agree that *Morphia* acts as a powerful hypnotic. Uncombined, however, it has no action on account of its insolubility. A solution of the pure principle in olive oil (and probably also in* alcohol) is almost twice as powerful as the same quantity of the watery extract of opium. United with sulphuric, hydrochloric, or acetic acid, it exerts an energy equal or somewhat superior to the same quantity of watery extract; and it appears that the mineral acids have more efficacy than the acetic in neutralizing its deleterious properties. The extract of opium, deprived of morphia, has no influence. In general, however, it does produce a slight but sufficiently obvious effect, which has been rightly supposed by M. Orfila to arise from a portion of morphia remaining behind, after the action of the magnesia. We have found, in truth, that, after separating the morphia by the action of magnesia, and then evaporating the infusion to prepare this inert extract, a brown scaly matter is deposited in abundance, while the infusion continues quite fluid; and these scales are, in a great measure, composed of morphia, united with extractive or colouring matter. Of course they are allowed to remain in the ordinary mode of making the extract. It would lead us into too extensive details, were we to attempt to give an outline of the experiments of M. Orfila, by which he arrives at those conclusions. The experiments have every appearance of being accurate; and M. Orfila's great experience and fidelity entitle him to full credit. We may observe, however, that the reports of the state of the animals, while under the influence of the poison, are, for the most part, given at too distant intervals. In experiments made with so energetic a substance, much of their value and interest depends on the animals being closely watched, so that every change may be noticed as soon as it takes place; and, in the present instance, the

* These facts being ascertained upon dogs, comparative experiments have not been made with the alcoholic solutions. These animals cannot be used for this purpose, as a small quantity of very diluted alcohol is nearly as injurious to them as opium itself.

nature of the reports bears internal evidence that this has not been done.

A few observations of much interest are given by Sertuerner* on the effect of the alcoholic solution of morphia on himself and three of his pupils. He found, that repeated small doses of half a grain produced at first decided excitation, then weakness, numbness, and tendency to fainting. After swallowing vinegar while in this condition, violent vomiting was excited, profound sleep intervened in one delicate individual, and next day he was tormented with nausea, vomiting, headache, anorexia, constipation, and heaviness. Notwithstanding this unequivocal experiment, a conjecture has been started by M. Magendie, that morphia produces a pure soporose state, and is exempt from the idiosyncratic action and after effects, which so often attend the use of opium. These effects he ascribes to the presence of another peculiar principle in opium, namely, the salt of Derosne, now more usually denominated Narcotine. Though noticed long ago by Derosne, it was constantly mistaken for one of the salts of morphia, till M. Robiquet† pointed out its distinctive properties. It is an azotised substance, crystallizing in beautiful pearly prisms or tables; soluble in fixed oil, and still more in ether and the acids; insoluble in water, and little soluble in alcohol; destitute of action on the vegetable colours, and incapable of neutralizing acids. These properties distinguish it from the vegetable alkalis, and especially from morphia; but its precise nature is not yet sufficiently understood. We may add, that we have ourselves examined it with some care; and all our observations agree with those of M. Robiquet, excepting so far as regards the form of its crystals. The crystals of Sertuerner, and we believe also those of Robiquet, were quadrangular pyramids with rhomboidal bases; all those which we have procured have been rectangular tables bevelled on all the edges. The experiments of MM. Orfila and Magendie‡ on the physiological effects of this substance differ considerably; yet they coincide in attributing to it not so much a soporific as a mere stupifying power, which does not manifest itself till several hours after it has been swallowed. When eight or twelve grains, dissolved in olive oil, are given to dogs, death takes place some time betwixt the first and fourth day. The narcotine may be entirely removed from the extract of opium by macerating it in sulphuric ether, as was first pointed out by M. Robiquet; and in this way a preparation is procured, which, like morphia, has been supposed exempt from the occasional bad consequences of the common drug. No decisive experiments, however, have yet been made with this purified

* Ann. de Chim. & de Phys. V.
† Ann. de Chim. & de Phys. V.
‡ Journ. de Physiologie, I. and Nouv. Journ. de Med. I. & X.

extract: and yet nothing could be done more simply; it is only necessary to give it to a few individuals on whom the ordinary extract has a deleterious influence. There is one good case of the salutary effect of morphia on an idiosyncratic habit, related by M. Magendie, in the Nouveau Journal de Médecine, X. 23; in opposition to which, we of course cite that already quoted from the memoir of Sertuerner.

M. Magendie, in his Formulaire &c. proposes to employ the sulphate and acetate of morphia instead of the usual preparations of opium; but the great additional expense for a drug, already high-priced and in such extensive use, must prove a considerable bar to their general introduction, unless they really possess the advantages mentioned above. M. Vauquelin* has recently observed, that the opium from the indigenous poppy contains about as much morphia as the best opium of the Levant. If it should be also found (as is most likely) in the expressed juice or infusion of the fresh capsules, perhaps a process may be found for procuring the alkali at a much more moderate expense. M. Magendie starts a proposition, that by ringing changes on the salts of morphia, its hypnotic effect may be kept up without increasing its dose;—a very unlikely idea, to say the least of it.

We cannot leave this important subject, without noticing the explanation now afforded of the observations, published some time ago by M. Orfila in his Toxicologie Générale, concerning the impropriety of the early administration of acids, and especially of vinegar, in cases of poisoning by opium. In fact, while the poison remains in the stomach, acids augment its energy, by accelerating the solution of its active principle. But, when it has been removed, acids become very beneficial, as M. Orfila has himself indeed observed. Yet his caution is perhaps not to be understood as being without exception; for his experiments still leave one point unexplored, concerning the agency of acids. The solution in alcohol, the most ordinary vehicle of opium, when swallowed for the purpose of self-destruction, is probably more energetic than the combinations with the mineral acids; although we must remind our readers that no† experiments have been made to compare the tincture with the other solutions. But if it should prove more energetic, and as it is certain that sulphuric acid neutralizes the deleterious properties of morphia much more than the acetate, it may be found that the mineral acid diminishes the energy of a tincture present in the stomach, although vinegar would augment it. This however, is, after all, a point of no great moment in a practical view, as it is an excellent general rule, that neither

* Ann. de Chim. & de Phys. IX. 282.

† See Note on p. 503.

acid nor any other corrective is to be administered, till the poison has been thoroughly ejected from the stomach.

Strychnia possesses, in a very high degree, all the noxious qualities of nux vomica and the other strychni. It is, perhaps, the most powerful, and, next to hydrocyanic acid, the most rapid of poisons. M. Magendie has killed a dog with one-eighth of a grain, and we have ourselves seen one die in two minutes after the injection of one-sixth of a grain into the cavity of the pleura. The phenomena which take place are precisely the same as those which characterize the use of the strychni; namely, the animal is affected with violent and well-marked tetanus, and no organic lesion is observable after death. It was easy to foresee that so energetic a substance would soon become a favourite article of the Materia Medica. Accordingly, we find M. Magendie, in his Formulaire, recommending it in "toutes les maladies avec affaiblissement, soit local, soit général; les paralysies de tous genres, générales ou partielles;" and indeed we understand, that in Paris, its use is just as indiscriminate as M. Magendie, by this recommendation, could desire to make it. It has been very much employed in palsy, and in some instances pushed so far as to induce tetanus. Its efficacy in this disease has been commended in the most unqualified manner; and M. Fouquier of La Charité has made some clinical observations upon it, which have not yet reached us. We may observe, in the mean time, however, that we have good reason to know that many of the patients, supposed to have been cured, were reattacked soon after they left the hospital. M. Magendie adds, that he has used it for exciting indolent stomachs (estomacs paresseux). Surely, when we possess so many pleasant, efficacious, and innocent bitters, even among the new remedies noticed in his Formulaire, it is an effort of the blindest attachment to propose the substitution of so formidable and disagreeable a remedy.

Brucia produces precisely the same effects as the last alkali, but in a feebler degree.

Veratra in large doses has also the same effect. In less quantity it excites vomiting, and promptly relaxes the intestines; but those symptoms are often very violent, and accompanied with inflammation. It is, therefore, with some surprise that we find M. Magendie using it "pour certains vieillards, chez lesquels il existait une accumulation énorme de matières fécales dans le gros intestin." We believe that even British physicians, with all their fearlessness in the use of drastic purgatives, will hardly dare to follow him. Veratra is likewise a most powerful but dangerous sternutative.

Delphia, in the dose of six grains, produces nausea, vomiting, vertigo, and convulsions, which usher in inflammation of the

stomach; and death ensues in two, three, or four days. Dissolved in acetic acid, it kills in forty or fifty minutes, without producing inflammation.

Emeta given to dogs, in doses varying from half a grain to three grains, occasions vomiting of longer or shorter duration. Ten grains produce it in a more violent degree; and death follows within 24 hours, from inflammation of the tissue of the lungs, and of the mucous membrane of the digestive canal. This observation is rather an interesting one, as it associates this emetic with the tartrate of antimony, which in over-doses produces the same morbid appearances. There seems to be no great advantage in substituting emeta for the ordinary powder of ipecacuanha, excepting that, its taste being much less offensive, it may be very easily given to children.

Accurate experiments have not been made with the other poisonous alkalis.

Gentiania is not a poison. M. Magendie has injected it into the veins without any obvious effect, and has himself swallowed two grains without experiencing any sensation but that of extreme bitterness, followed by gentle warmth in the region of the stomach. He proposes to introduce into the Materia Medica a tincture, containing five grains in each ounce of diluted alcohol. We see no reason whatever why this preparation should displace our compound tincture of gentian, or even the tinctura amara of the Parisian codex.

The discovery of the alkaline principles of bark, promises to be of considerable importance. Gomes of Lisbon was the first who procured *cinchonia* in a state of purity; but he was ignorant of its alkaline nature, the first observation of which we owe to Labillardière, nephew of the celebrated navigator. Its existence was pointed out long before by Dr. Duncan junior, who inferred, from the action of certain reagents on the infusions of bark, that it contained a peculiar principle; and he was also the first to denominate it cinchonin. MM. Pelletier and Caventou, in their history of previous analyses, have omitted this remark of Dr. Duncan;—an omission the more unaccountable, that Gomes himself, who is quoted by them, makes distinct mention of it in his memoir. The discovery of kina, the other principle of cinchona, belongs entirely to the French chemists. We would advise our readers to peruse carefully the little memoir of MM. Pelletier and Caventou, and we regret that our limits do not allow us to give an abstract of it. It is a perfect model of this kind of analysis, and brings us nearer to the actual, pure proximate principles composing a complicated substance, than any other analysis yet executed. The same we have no doubt will be done for opium by M. Robiquet, who has been lately engaged in further researches on this substance;

and has already, we understand, made some important additions to his former discoveries. *Cinchonia* and *kina* exert no immediate apparent action on the economy. The clinical experiments of M. Chomel of La Charité, establish that kina possesses, in a high degree the febrifuge virtues of the common bark. One or two doses (varying from 6 to 16 grains) of the sulphate, generally checked the paroxysms of regular intermittents. Of 13 patients, 10 were cured, 5 by the first dose, the others after the second. In two of the remaining three, the paroxysms became milder; in the thirteenth no abatement was produced; and in all the three the ordinary bark was afterwards tried with no better effect. The precautions which he used to remove all sources of fallacy, render his results unquestionable; and we are happy to find them completely confirmed by a few cases published along with them by M. Double, Pelletier's brother-in-law. M. Bally of Paris, and M. Duval of Brest, have likewise published similar experiments, leading to the same conclusion; but these we have not yet been fortunate enough to procure. The observations of M. Double likewise go to prove, that the unpleasant effects produced on the stomach by the bark, are rarely or never occasioned by the sulphate of quina. The sulphate of kina from the Carthagena bark, and the sulphate of cinchonia, have been each tried only once, and both failed. Of course, no inference whatever can be drawn before further experiments are made. When the various kinds of bark, at different times substituted for cinchonia, shall have been analyzed, and their products examined therapeutically, we shall be able to form a just estimate of the value of this discovery. At present, we can only notice the explanation which MM. Pelletier and Caventou's experiments enable us to give of the supposed superior efficacy of red bark. This species contains both kina and cinchonia, and each in larger quantity than any other species; the pale bark contains only cinchonia, and the yellow bark only kina. The Portlandia hexandra, in its composition, is closely allied to red bark. If those principles be also found in the Cusparia febrifuga, Swietania febrifuga, Aristolochia serpentaria, &c., and possess the same medicinal properties as those derived from the different species of cinchona, we need not attempt to show how much the simplicity and energy of our Materia Medica must be increased.

During the course of the preceding observations, it has been our object to enable our readers to gather from them as accurate an idea as possible, of the present and future advantages likely to accrue from the discovery of the vegetable alkalis. It has been our object, above all, to avoid an error committed by almost all those who have interested themselves deeply in the subject, and by none more than by our rival neighbours;—namely, a

belief that those principles may be advantageously substituted for the drugs which depend upon them for their therapeutic efficacy, and that, in fact, medicine is to take a new spring from the moment when this shall have been accomplished. In substituting new remedies for those in general use, three points must be held in view,—simplicity, energy, and cheapness. As to the first of these, there can be, in the present instance, but one opinion. We do not consider that a superior, or rather a preferable, or more useful energy, has yet been proved to reside in most of the vegetable alkalis: excepting the experiments of M. Chomel on kina, we have seen hardly any trustworthy clinical researches on the subject. The greatest objection of all is, that the price of our remedies must be prodigiously increased. In employing the alkalis instead of the vegetables, not only is the expense augmented by the process for their preparation, but they actually do not possess nearly the same degree of energy as they do in their natural state of combination. That is, if an ounce of any vegetable matter contains 30 grains of an alkali, those 30 grains are not so powerful in their pure state, as when they are united with other principles to form an ounce of the undecomposed vegetable. We have no means of conjecturing whence this proceeds. There is much reason to expect, however, that the thorough chemical and therapeutic investigation of opium and cinchona, will be attended with results most profitable to medicine. Several chemists and physicians are at present occupied with this research; and, as soon as any thing decisive and important shall have been ascertained, we shall not fail to submit to our readers a more detailed account of the analysis and physiological and therapeutic properties of those two remedies.

Our plan has necessarily led us to omit two new remedies admitted by M. Magendie into his Formulaire, namely, hydrocyanic acid and iodine. These may be considered at a future opportunity. It will be observed, that we have by no means restricted ourselves to the two works which constitute the title of this inquiry. Those who wish to consult the other sources of our information, will find them in a variety of original memoirs, contained chiefly in recent numbers of the Annales de Chimie, Annales de Chimie et de Physique, Journal de Physique, Journal de Pharmacie, Journal de Physiologie, and Nouveau Journal de Médecine.

On the Nerves; giving an Account of some Experiments on their Structure and Functions, which lead to a new Arrangement of the System. By CHARLES BELL, esq. (From the Philosophical Transactions.) Quarto, pp. 30. One Plate. London, 1821.

(From the Medico-Chirurgical Review and Journal, for March, 1822.)

Without physiology—that is, without a perfect knowledge of the laws by which the *healthy* functions of our system are governed, we cannot expect to make much progress in pathology. Every person, therefore, who elucidates a known, or discovers a new law in the animal economy, contributes his mite to the advancement of the science of medicine—even if that law should not *appear* to bear on any point of pathology or practice at the time.* No man, in this country, works harder in unravelling those mysteries of the nervous system which puzzle our senses, than the present distinguished teacher in the venerable school of the Hunters.

Mr. Bell remarks that, when the physiologist sees two distinct nerves ramifying over the face—three nerves, from different sources, going to the tongue—four to the throat—and nerves in most perplexing intricacy to the neck; when he finds one nerve with numerous ganglia upon it, and another without them—when, in short, after a minute dissection of the nervous system, he finds a mesh, or net-work, spreading every where, it is not surprising that the seeming intricacy and confusion should make him, in despair, resign inquiry. Mr. Bell, however, by long dissection and study, has been able gradually to decipher some of the abstruse language of the nervous system, and hopes, sooner, or later, to come to a comprehension of the whole.

The present inquiry is limited to the *nerves of respiration*, which, our author thinks, form a system of great extent, comprehending all the nerves which serve to combine the muscles employed in the act of breathing and speaking. Tranquil breathing gives a very limited view of the respiratory muscles. But if a man be excited by exercise or passion, or by whatever accelerates the pulse, the respiratory action is extended and increased; and, instead of the almost imperceptible motion of the chest, as in common breathing, the shoulders are raised at each inspiration, the muscles of the throat and neck are violently drawn, and the lips and nostrils move in time with the general action. If he does not breathe through his mouth, the nostrils

* When the air-balloon was first discovered, some one flippantly asked Dr. Franklin what was the use of it? The Doctor answered, in the Socratic manner, by asking another question:—"*What is the use of a new-born infant?—it may become a man.*"

expand, and fall in time with the rising and falling of the chest, whilst the curious apparatus of cartilages and muscles of the nose, are as regularly in action as the levator and depressor muscles of the ribs.

"It is quite obvious, that some hundred muscles thus employed in the act of breathing, or in the common actions of coughing, sneezing, speaking, and singing, cannot be associated without cords of connexion or affinity, which combine them in the performance of these actions: the nerves which serve this purpose I call respiratory nerves." P. 6.

Mr. Bell observes that the nerves of all animals, including man, may be divided into two systems or classes—into those destined for the organization necessary to life and motion in an animal—and those which supply organs superadded as the animal advances in the scale of existence. The nerves of the spine, the tenth or sub-occipital nerve, and the fifth or trigeminus, belong to the simple and symmetrical system.

"All these nerves agree in these essential circumstances; they have all double origins; they have all ganglia on one of their roots; they go out laterally to certain divisions of the body; they do not interfere to unite the divisions of the frame; they are all muscular nerves, ordering the voluntary motions of the frame; they are all exquisitely sensible; and the source of the common sensibility of the surfaces of the body: when accurately represented on paper, they are seen to pervade every part; no part is without them; and yet they are symmetrical and simple as the nerves of the lower animals.

"If the nerves be exposed in a living animal, those of this class exhibit the highest degree of sensibility; while, on the contrary, nerves not of this original class or system, are comparatively so little sensible, as to be immediately distinguished; in so much that the quiescence of the animal suggests a doubt whether they be sensible in any degree whatever. If the *fifth nerve and the portio dura of the seventh*, be both exposed on the face of a living animal, there will not remain the slightest doubt in the mind of the experimenter which of these nerves bestows sensibility. If the nerve of this original class be divided, the skin and common substance is deprived of sensibility; but if a nerve not of this class be divided, it in no measure deprives the parts of their sensibility to external impression." P. 10.

The nerves connecting the internal organs of respiration with the sensibilities of remote parts, and with the respiratory muscles are distinguished from the above by many circumstances. They have not double roots, nor ganglia on their origins. They come off from the *medulla oblongata* and the upper part of the spinal marrow, and from this origin they diverge to those several remote parts of the frame which are combined in the motion of respiration. These are the nerves which give the appearance of confusion to the dissection, because they

cross the others, and go to parts already plentifully supplied from the other system. The following are *respiratory nerves* according to their functions.

1. The *par vagum*, distributed to the larnyx, lungs, heart, and stomach, associating these organs together, though they are plentifully supplied with nerves from other sources.

"Comparative anatomy would lead us to infer that this nerve is not essential to the stomach, as it does not exist but where there are heart and lungs to associate with a muscular apparatus of respiration. That the stomach must be associated with the muscular apparatus of respiration, as well as the lungs, is obvious, from the consideration of what takes place in vomiting and hiccough, which are actions of the respiratory muscles excited by irritation of the stomach." P. 11.

2. *Respiratory Nerve of the Face*, or portio dura of the seventh. This nerve also goes off from the *medulla oblongata*, spreads wide on the face, and on it solely depend all those motions of the nostril, lips, and face generally (as will presently be shown) which accord with the motions of the chest in respiration. By the division of this nerve the face is deprived of its consent with the lungs, and of all expression of motion.

3. *Superior Respiratory Nerve* of the trunk, or spinal accessory, which has puzzled physiologists on account of the singular course which it pursues. After arising from the upper part of the spinal marrow, in a line with the roots of the other respiratory nerves, it passes into the skull, and comes out with the par vagum, descending upon the neck, supplying muscles of the shoulder already profusely supplied with nerves from other sources. This nerve controls the operations of the muscles of the neck and shoulder in their office as respiratory muscles, when by lifting the shoulders they take the load from the chest, and give freedom to the expansion of the thorax. When this nerve is cut across in experiments, the muscles of the shoulder, which are in action as respiratory muscles, cease their co-operation, but remain capable of voluntary actions.

4. *The internal Respiratory Nerve*—phrenic or diaphragmatic. This is the only nerve of the system usually considered respiratory. Its origin, course, and destination are familiar to all. But there is another nerve much resembling it which has been entirely overlooked. It is—

5. *The external Respiratory Nerve*, which has its origin with the preceding nerve, coming from the cervical vertebræ, and being connected with the phrenic nerve. It runs down the

neck, crosses the cervical and axillary nerves, passes through the axilla, and arrives on the outside of the ribs, where it is hardly necessary to observe, the muscles are already supplied by nerves coming out betwixt the ribs from the system of regular nerves.

"These four last mentioned nerves govern the muscles of the face, neck, shoulders, and chest, in the actions of excited respiration, and are absolutely necessary to speech and expression. But there are other nerves of the same class which go to the tongue, throat, and windpipe, no less essential to complete the act of respiration. These are the glosso pharyngeal nerve, the lingual, or ninth of WILLIS, and the branches of the par vagum to the superior and inferior larynx." P. 13.

The nerves of the face afford the best illustration of the foregoing doctrines. The human countenance performs many functions,—mastication, breathing, natural voice and speech, expression of the passions and emotions.

Trigeminus. In all animals that have a stomach, with palpi or tentacula to embrace their food, the rudiments of this nerve are to be observed. From the nerve that comes off from the anterior ganglion of the leech, and which supplies its mouth, we may trace up through the gradations of animals a nerve of taste and manducation, until we arrive at the complete distribution of the fifth or trigeminus in men. It comes off from the base of the brain, in so peculiar a situation as to receive roots from the medullary process of the cerebrum and cerebellum. It has a ganglion near its origin. This nerve, as will be shown, serves for taste, motion, and common sensibility in the tongue, jaws, and face.

Portio Dura of the 7th Pair. This nerve does not exist, except where there is some consent of motions established betwixt the face and the respiratory organs. It arises close to the nodus cerebri, in a line with the roots of the other respiratory nerves. While within the temporal bone two cords of communication are formed with the branches of the 5th nerve—the vidian and corda tympani. By these communications nerves go in both directions—branches of the seventh are sent to the membrane of the nose, and to the muscles at the back of the palate—while branches of the fifth nerve, and also of the sympathetic, are brought into the interior of the ear. By the corda tympani, branches of this respiratory nerve have access to the velum palati and its muscles. After the nerve emerges on the face every anatomist knows what an extensive range it takes, penetrating to all the muscles already amply supplied by branches of

the fifth pair. The descending or inferior branches of the portio dura going under the lower jaw and to the superficial muscles of the throat and neck, are connected with the branches of the spinal nerves, and with the respiratory nerves.

The structure of this nerve, Mr. Bell has found to differ from that of the fifth pair, and to correspond with that of the par vagum.

The question now naturally occurs, whether these nerves perform the same function? whether they furnish a double supply of the same property or endowment—or whether they do not perform different offices? This question is now to be decided by experiment.

"*Experiment.* An ass being thrown, and its nostrils confined for a few seconds, so as to make it pant and forcibly dilate the nostrils at each inspiration, the portio dura was divided on one side of the head; the motion of the nostril of the same side instantly ceased, while the other nostril continued to expand and contract in unison with the motions of the chest.

"On the division of the nerve, the animal gave no sign of pain; there was no struggle nor effort made when it was cut across.

"The animal being untied, and corn and hay given to him, he eat without the slightest impediment.

"An ass being tied and thrown, the superior maxillary branch of the fifth nerve was exposed. Touching this nerve gave acute pain. It was divided, but no change took place in the motion of the nostril; the cartilages continued to expand regularly in time with the other parts which combine in the act of respiration; but the side of the lip was observed to hang low, and it was dragged to the other side. The same branch of the fifth was divided on the opposite side, and the animal let loose. He could no longer pick up his corn; the power of elevating and projecting the lip, as in gathering food, was lost. To open the lips the animal pressed the mouth against the ground, and at length licked the oats from the ground with his tongue. The loss of motion of the lips in eating was so obvious, that it was thought a useless cruelty to cut the other branches of the fifth.

"This experiment of cutting the respiratory nerve of the face, or *portio dura*, gave so little pain, that it was several times repeated on the ass and dog, and uniformly with the same effect. The side of the face remained at rest and placid, during the highest excitement of the other parts of the respiratory organs.

"When the ass, on which the respiratory nerve of the face had been cut, was killed, which was done by bleeding, an unexpected opportunity was offered of ascertaining its influence, by the negation of its powers on the side of the face where it was cut across." 18.

In this ass, where the respiratory facial nerve was cut, the most remarkable contrast was exhibited in the two sides of the face, while the animal was dying; for, whilst the one side was in universal and powerful contraction, the other, where the nerve was divided, remained quite placid.

"From these facts we are entitled to conclude, that the *portio dura* of the seventh, is the respiratory nerve of the face; that the motions of the lips, the nostrils, and the velum palati are governed by its influence, when the muscles of these parts are in associated action with the other organs of respiration. These passages to the lungs are membranous tubes, moved by muscles, which serve to expand and widen them, so that the air may freely enter into the lungs. It is obvious that to produce this, these muscles must have a consent with the other muscles of respiration, and move simultaneously with them; and this is effected through the respiratory nerve of the face. It shall be proved in the sequel, that the throat, neck, shoulders, and chest, have similar nerves to this, similar in structure and function, and that these unite all the extended apparatus of breathing and speaking." 19.

The actions of sneezing and coughing are entirely confined to the influence of the respiratory nerves. When carbonate of ammonia was put to the nostrils of the ass, that side of the nose and face where the nerves were entire, was curled up with the peculiar expression of sneezing; but, on the other side, where the nerve was divided, the face remained quite relaxed, although the branches of the fifth pair and sympathetic were entire. The same effect was produced in a dog.

"These last experiments show, that the peculiar expression in sneezing, results from an impression on the respiratory nerves, and that the muscles of the face are drawn into sympathy solely by the influence of the respiratory nerve of the face." 20.

Mr. Bell cut the respiratory nerve on one side of the face of a monkey, and the peculiar activity of his features on that side, ceased altogether. The timid motions of his eyelids and eyebrows were lost, and he could not wink on that side. His lips were drawn to the other side, like a paralytic drunkard, whenever he showed his teeth in rage.

"We have proofs," says Mr. Bell, "equal to experiments, that in the human face the actions of the muscles which produce smiling and laughing, are a consequence of the influence of this respiratory nerve. A man had the trunk of the respiratory nerve of the face injured by a suppuration, which took place anterior to the ear, and through which the nerve passed in its course to the face. It was observed, that, in smiling and laughing, his mouth was drawn in a very remarkable manner to the opposite side. The attempt to whistle was attended with a ludicrous distortion of the lips; when he took snuff and sneezed, the side where the suppuration had affected the nerve remained placid, while the opposite side exhibited the usual distortion." 21.

Thus it appears that, whenever the action of any of the muscles of the face is associated with the act of breathing, it is performed through the operation of this nerve. Mr. Bell cut a

tumour from before the ear of a coachman, and divided a branch of the nerve which goes to the angle of the mouth. Some time afterwards the man returned to thank Mr. Bell for ridding him of a formidable disease, but complained that he could no longer whistle to his horses.

Mr. Bell makes many ingenious observations and experiments on the functions of the trigeminus or fifth pair, to which we cannot do justice in this place.

"By an experiment made on the 16th of March, it was found, that on cutting the infra-orbitary branch of the fifth nerve on the left side, and the *portio dura*, or respiratory, on the right side of an ass, the sensibility to pain on the right side, where the *portio dura* of the seventh nerve was cut, remained entire, while that of the left side was completely destroyed by the division of the fifth. It was also apparent in this experiment, as in the others, that there was the most marked difference in the sufferings of the animal, when these nerves were cut across. The cutting of the fifth nerve gave pain in a degree corresponding with our notions of the sensibility of nerves; but in cutting the *portio dura*, it was not evident that the animal suffered pain at all." 22.

Some people may ask, to what does this discussion lead after all?—It may be answered, that both the surgeon and physician are interested in knowing that two sets of nerves are distributed to the face, having distinct functions. To the surgeon, this knowledge must prove useful, in performing operations on the face, as well as in observing the symptoms of disease; but to the physician these facts are peculiarly important, as—

"He will be better able to distinguish between that paralysis which proceeds from the brain, and that partial affection of the muscles of the face, when, from a less alarming cause, they have lost the controlling influence of the respiratory nerve.

"Cases of this partial paralysis must be familiar to every medical observer. It is very frequent for young people to have what is vulgarly called a blight; by which is meant, a slight palsy of the muscles on one side of the face, and which the physician knows is not formidable. Inflammations of glands seated behind the angle of the jaw will sometimes produce this. All such affections of the respiratory nerve will now be more easily detected; the patient has a command over the muscles of the face, he can close the lips, and the features are duly balanced; but the slightest smile is immediately attended with distortion, and in laughing and crying the paralysis becomes quite distinct." 25.

The knowledge of the sources of expression, teaches us to be more minute observers. There are conditions of the lungs, Mr. Bell remarks, where the patient is in great danger, and yet the inflammation is not marked by the usual signs of pain and difficult motion of the chest. We shall see nothing but the

twitching of those muscles of the face which are animated by the respiratory nerve. We see a certain unusual dilatation of the nostrils, and a constrained motion of the lips, which, with the change of voice, are just sufficient to give alarm, and indicate the patient's condition. "This is a state of the lungs very often produced after severe accidents, as gun-shot wounds, and great surgical operations."

Mr. Bell hopes soon to lay before the Royal Society an account of the nerves of the throat, neck, and chest, and to be able to distinguish and separate the nerves of respiration, amid the apparent intricacy of the general system.

"By cutting across these nerves of respiration, we shall find it possible successively to stop the motions of the several parts, which unite in the act of respiration; not only to stop the motion of the diaphragm, but the motions of the side, of the shoulder, of the larynx or the pharynx, by cutting their respective respiratory nerves. When this is done, they will be left in the exercise of their other functions through their other nerves, and still alive to other excitements, and capable of performing the voluntary motions, though dead to the influence of the heart and lungs." 27.

An excellent engraving of the nerves of the face accompanies this paper. We shall not fail to take early notice of Mr. Bell's succeeding communications, and have no doubt of his throwing considerable light on one of the most difficult and intricate subjects of physiological anatomy.

Biography.

Biographical Account of Pierre-Hubert Nysten, M. D. late Lecturer on Materia Medica in Paris, &c. &c.

(From the Quarterly Journal of Foreign Medicine and Surgery.)

Pierre-Hubert Nysten was born at Liège on the 30th of October, 1771. His parents were of but moderate circumstances. Destined to the bar, he pursued his first studies in the college of his native town, where he distinguished himself chiefly by his docility and application. Scarcely had he finished his studies in humanity, and fairly entered upon the preliminary exercises required for the profession of an advocate, when an irresistible inclination attracted him to the pursuit of medicine. Some books of anatomy had fallen into his hands, and every other kind of reading soon appeared to him to be without interest. Encouraged by his uncle in his new pursuits, he went to study medicine at Strasburg. After the death of his

protector, he quitted that city, and in 1800 went to Paris. There, his activity and habits of reflection soon attracted the attention of his masters. It was at this time that he made his first galvanic experiments upon the excitability which subsists in different parts of the body after life has ceased. All his observations on this subject are collected in the Thesis, which he defended on the 8th December, 1802, intitled *Nouvelles expériences galvaniques faites sur les organes musculaires de l'homme et des animaux à sang rouge.* The title of Doctor was presented to him gratuitously.

For a long time he had engaged with ardour in the study of chemistry, and in 1805 he occupied the situation of assistant in the laboratory of the *Ecole de Médecine.* He also felt much interest in the study of materia medica, which he afterwards taught with distinction.

Being appointed in 1806, along with M. Bailly, to accompany Professors Desgenettes and Duméril into Spain, he hastened to partake the labours of those courageous and learned men, with whom he was taught to brave even death itself. This was not the only occasion on which he was exposed to such dangers. He was sent, in 1808, with M. Geoffroy, into several of the departments, through which the Spanish prisoners were passing, that he might aid in arresting the progress of the contagious diseases which the crowding together of these miserable individuals had produced. The report upon this subject, inserted in the *Bulletin de la Faculté de Médecine* for March, 1809, proves that nothing was neglected in the exact observation of the effects of the epidemic, nor in the means employed to arrest its progress. Inspections of the dead bodies were constantly performed, unless peculiar circumstances rendered it impossible. The report not only affords lessons of great practical utility, but displays an example of that admirable courage which makes the physician forgetful of himself, in his attempts to relieve the sufferings of his fellow creatures.

Scarcely had M. Nysten returned from this mission, when on the 18th May, he was appointed to render his assistance to the inhabitants of Joigny. The *Bulletin de la Faculté* for 1809, contains a letter from him on this subject; and he afterwards gave a circumstantial history of the disease, which he alone had combated with success. The same *Bulletin* contains the eulogiums addressed to him on this occasion, in the discourse which M. Desgenettes pronounced on the 9th of November, at the reopening of the *Ecole de Médecine.* On his return, M. Nysten gave lessons in Materia Medica. We find him again, in 1812, with MM. Geursent and Savary, giving his professional assistance to the inhabitants of the Department of the Yonne, then suffering from typhus. Some time after, he provisionally occupied

the place of physician at the Bicêtre, which was crowded with soldiers, labouring under the same disease.

In 1806, he published, first of all with M. Capuron, and afterwards alone, his *Dictionaire des Termes de Médecine.* Science and commerce were not less indebted to him than humanity; he was twice sent into the south of France, in order to investigate the causes, and arrest the progress of the mortality among silk worms, a subject upon which he published an excellent work, in 1808. Besides the memoirs he furnished to different learned societies, he published the second edition of the *Matiére Médicale* of Schwilgué, in 1809. It was now that he undertook his experiments on the effects which are produced on the animal economy by different kinds of gas introduced into the circulation; and in 1811, he published the most important of his works, his *Recherches de Physiologie et de Chimie Pathologiques*, which was intended by him, and has been judged worthy to be considered as a continuation of Bichat's Treatise on Life and Death. Bichat had intended writing upon pathological physiology. Instead of giving a new edition of his Researches upon Life and Death, he meant to have introduced the first part of that work into a treatise upon physiology, and to have changed materially the second part. Bichat intended to make a new series of experiments with this view; and as M. Nysten had communicated to him the design which he had formed of undertaking some experiments upon the chemical phenomena of respiration, they purposed to have commenced their labours together, when the unexpected death of Bichat took place. The work of M. Nysten is divided into five sections. The first treats of the effects produced upon the animal economy by the presence of different kinds of gas in the circulating system. In the second, he examines the state of the chemical phenomena of respiration in diseases. The third has for its object the morbid alterations of the urine. In the fourth, the author considers the state of the vital properties after the extinction of the general life. In the fifth, he treats of the stiffness to which the body is subject some time after death. Every part of the work bespeaks a man of extensive knowledge, and possessed of the true spirit of observation. It displays great erudition and clearness in explanation, conjoined with a peculiar art in experimenting. The articles which M. Nysten furnished for the *Dictionaire des Sciences Médicales*, either alone or in concert with M. Hallé, are distinguished throughout by their precision and excellence.

Always pensive and absent, Nysten had a certain degree of originality about him, which even his intimate friends could scarcely describe. Incessantly buffeted by fortune, he in vain called all the resources of his mind into play—the blind goddess

appeared obstinately to shun him. General esteem, the consideration of his masters, the sincere attachment of his friends, his colleagues, and his pupils, constituted all his wealth: but these were insufficient for the support of an affectionate wife, and two interesting daughters. The situation which he filled at the *Hospice des Enfans*, and his connexions, which began to extend, promised speedily to remove the cares and disgusts which he had so often experienced, when apoplexy terminated his life on the 3d of March, 1818. He had for a long time felt himself threatened by that disease: his fears, grounded on the loss of several of his relations from the same cause, were strengthened by precursory symptoms, such as giddiness, heaviness, and intense and habitual headache.

As a physician attached to the dispensaries, he showed the greatest interest for the poor who claimed his assistance; and M. Guilbert has paid a just tribute to his memory at one of the meetings of the *Societé Philanthropique*. M. Esquirol had already performed this painful duty in the name of the *Faculté*. M. Hallé also has expressed his regret, in a notice prefixed to the third edition of the *Matière Medicale* of Schwilgué, which Nysten had again revised, to put it on a footing with the progress of science.

Medical and Philosophical Intelligence.

A Letter to Charles Henry Parry, M. D. F. R. S. *&c. &c. on the Influence of Artificial Eruptions, in certain Diseases incidental to the Human Body, with an Inquiry respecting the probable advantages to be derived from further experiments.* By Edward Jenner, esq. M. D. LL. D. F. R. S. M. N. I. F. &c. &c. &c. and Physician Extraordinary to the King. 4to. pp. 67. Baldwin, and Co. London. 1822.

(From the London Medical and Physical Journal.)

The illustrious author of the publication before us, has been long impressed with the idea, "that every pimple with a vesiculated head has an errand to perform for the benefit of the constitution." The influence of pustular eruptions, whether naturally or artificially excited, in many diseases incidental to the human body, can only be despised by superficial observers. To those practitioners who are intimately acquainted with the important functions performed by the dermoid system, the consent existing between it, and the more important organs in the economy, is a fact so striking, that we often find them grounding upon it, their judgment, as well as treatment of particular diseases. What wonder, then, that he, who has outstripped all his cotemporaries in the consideration of a subject of such high

importance, should now come forward and propound, for the curious reflection of the medical public, a question, once keenly agitated, lately neglected, and now again likely to be discussed.

It is well known that the application of tartar emetic to the skin produces a pustular eruption not unlike that of mature small pox—nor can it be wholly forgotten that, at one period, this sort of external application had been recommended, on the false principle of counter-irritation, for the removal of obstinate internal complaints. So far back as the year 1794, Dr. Jenner had directed his attention to this subject; but his experience, at that time, was much too confined to enable him to bring forward facts of sufficient interest for public information; that experience has since been extended, and Dr. Jenner, deeming the question to be one of importance, has brought together several cases which have either passed under his own eye, or those of others on whose testimony he can rely, in order to give it additional interest, and with a view to direct to it an appropriate share of public attention.

The subject seems to have formed, occasionally, the topic of conversation between Dr. Jenner and Dr Charles Parry—and to the latter, he, therefore, addresses his dissertation in the form of a letter.

The first portion of the volume contains the details of eighteen cases, the results of which, as corroboratory of the efficacy of artificial eruptions in curing various complaints are most satisfactory.

Case 1, Mania. Cerate with tartarized antimony rubbed on the inside of arms night and morning, which produced papulæ of some magnitude discharging a serous fluid about the third day. "The transition from derangement to health was almost inconceivable."—Case 2, Idiocy, with a carbuncular tumour between the scapulæ. Tartar emetic ointment applied to the nape of the neck, and the patient regained a sane state of mind soon after the eruptions were produced.—Case 3, Phthisis with anasarca and an enlargement about the left side of the thorax. The tartar emetic ointment rubbed on this part until pustules were produced. Complete cure in six weeks.—Case 4, Spasmodic asthma. Tartar emetic ointment on the nape of the neck. Greatly relieved.—Case 5, Disordered state of the brain; inflammation of the right eye. Tartar emetic ointment rubbed on the left arm. Cured in THREE DAYS.—Case 6, Chronic hepatitis with enlargement and induration. Tartar emetic ointment followed by pustules. Recovered with *astonishing rapidity*.—Case 7, Diaphragmitis—difficult deglutition. Spontaneous eruptions, with discharge, on the legs. Progressive recovery.—Case 8, Hemiplegia, chorea, convulsive fits. Tartar emetic ointment in the line of the cervical vertebræ. Cured.—Case 9, Mania. Tartar emetic ointment employed. Cured.—Case 10, Mania puerperalis. Tartar emetic ointment inside the arm followed by eruption after the lapse of a fortnight. Recovered.—Case 11, Hypochondriasis—mania. Tartar emetic used with much advantage; but the use of it relinquished by the parents before the recovery was complete.—Case 12, Hypochondriasis. Tartar emetic ointment on the pit of the stomach. Recovered.—Case 13, Pyrosis, vomiting of blood. Tartar emetic ointment inside of the arms. Recovered.—Case 14, Hysteria

gliding into insanity. Tartar emetic ointment rubbed on the arm. Recovered.—Case 15, Hypochondriasis bordering on insanity. Tartar emetic ointment. Greatly relieved.—Case 16, Hemoptoe. Tartar emetic ointment on the chest. Relieved.—Case 17, Pulmonary affection. Tartar emetic ointment on the chest. Great relief. Case 18, Intense dyspepsia with pain. Tartar emetic ointment followed by complete recovery.

Such is the summary of the evidence brought forward by Dr. Jenner in support of his favourite plan; and it must be acknowledged to be of a very decided character.

Dr. Jenner next proceeds to comment upon a practice of which he ably traces the history; and, after hazarding a few physiological hints upon it, concludes with recapitulating the principal points of inquiry.

This letter contains the abstract of communications from Messrs. Fry, and Fosbrooke, and from the author's own relative, the reverend A. Jenner, speaking favourably of the effects of tartar emetic on the skin in various diseases.

We have long been in the habit of using this remedial agent in obstinate diseases of children on a very extended scale, as the registers of the Royal Metropolitan Infirmary for Children will prove. We know of no other application that will so effectually subdue mesenteric disease, as the one under consideration. Our plan, however, is not to order unctions, which, being tedious operations, and, necessarily, to be repeated frequently, are seldom attended to by the parents; but we direct a soft cerate containing soap or ammoniacum, the surface of which is entirely covered with finely pulverized tartarized antimony, to be applied to the abdomen or scrobiculum cordis, and have thus seldom failed to produce large crops of pustules filled with a thick, yellowish, laudable pus. We have adopted the same practice, and with success, for the relief of diseased action in the cranial brain of children; and in our private practice we have recommended the application of external tartarized antimony, with great benefit, in a case of gastrodynia that had resisted every other medicine,—in another of hip disease,—and in a third of hepatic phthisis in which the life of the patient had been despaired of by two other physicians; but where the appearance of the pustules ensured a recovery. The last case we attended with Mr. Willis, of Kennington.

Preservation of Anatomical Specimens.—Dr. Macartney, of the Dublin University, has for some time employed a solution of alum and nitre, for the purpose of preserving anatomical preparations. He finds that it preserves the natural appearances of most parts of the body more completely than spirits or any other fluid heretofore used. The proportions of the alum and the nitre, and the strength of the solution, require to be varied according to circumstances; and, in order to impregnate thoroughly the anatomical preparations, the liquor must for some time be occasionally renewed. The solution possesses such antiseptic powers, that the most putrid and offensive animal substances are rendered perfectly free from fetor by it in a few days. —(*London Medical and Physical Journal.*)

*Bell, Shaw, and Magendie on the Nervous System.**—In a paper laid before the Royal Society, Mr. Bell has given an account of the peculiar views which he has been known for some time past to entertain respecting the nervous system. He considers it in man, and in the higher animals, to consist of two distinct systems of nerves, the simple and the complex. The simple is found alone in animals possessing only sensation and locomotion, as in the leech and worm. In animals possessing other functions the complex is superadded to the simple, and in such animals this is the source of the intricacy and perplexity which till now have involved our knowledge of their nervous system. The nerves belonging to the simple class in man are distinguished by having each a double origin, by forming a ganglion on one of their roots, by going out laterally, by being all muscular nerves governing the voluntary motions, and by being all exquisitely sensible. They are the nerves of the spine, and the suboccipital of the fifth pair.

Mr. Bell affirms, that organs performing a variety of functions have a separate nerve arising from a separate origin for each function—that the tongue, for example, being an organ of touch, taste, and speech, has distinct nerves, subservient to each of these functions. The system of muscles concerned in respiration, of which there are above an hundred, have all, in addition to their other nerves, a nerve of respiration which serves to govern, and to harmonize their action, so that the most remote are thus enabled to act in unison with the lungs.

These RESPIRATORY NERVES are the par vagum, the portio dura of the seventh, the spinal accessory, the phrenic, and another of similar origin, which, after traversing the axillary nerves, passes to the muscles on the outside of the ribs. The anatomist, according to Mr. Bell, will perceive that all of these arise from the medulla oblongata, or upper part of the spine, and that none of them have a double root, or form ganglia at their origin.

The portio dura of the seventh, is termed by Mr. Bell the respiratory nerve of the face, because it governs the action of the muscles of the cheeks, lips, and nostrils, which are concerned in respiration. If this nerve be divided these muscles will cease to act in unison with the lungs, while their power of voluntary motion, and their sensibility will remain unimpaired; but if the branches of the fifth be cut, the portio dura being left entire, the reverse will happen—the muscles will fall down, losing their power of voluntary motion, and their sensibility, but still acting in unison with the organs of respiration.

To exhibit a proof of this, an ass was tied and thrown, and its nostrils confined, so as to excite violently the organs of respiration, making the animal pant and dilate the nostrils. The portio dura was then divided on one side of the head, and the motion of the nostril on that side instantly ceased. The animal gave no sign of pain on the nerve

* On the Nerves: with experiments on their structure and functions By C. Bell, esq. Phil. Trans. 1821.

On the Nerves of the Face. By J. Shaw, esq. in Brand's Journal, XII. 231.

Journal de Physiologie Experimentale. Par. M. Magendie.

being cut, and on being untied began to eat without the slightest impediment.

Another ass being tied and thrown, the superior maxillary branch of the fifth nerve was exposed. Touching it gave acute pain. On its being divided no change took place in the motion of the nostril, but the side of the lip was observed to hang low, and the power of elevating and projecting it was lost.

From each experiment Mr. Bell concludes, that the portio dura of the seventh pair is the respiratory nerve of the face. The action of the muscles in smiling has also been found to depend on the influence of this nerve. In the case of a man who had the trunk of the respiratory nerve injured, it was observed that his mouth in smiling or laughing was drawn very remarkably to the opposite side. The expression of a dog in fawning, by turning out of the edge of the lip, Mr. Bell thinks a modification of smiling; this power is lost on the portio dura being divided. By other experiments the facial expression of other passions is found to depend also upon this nerve; hence it is deemed the grand nerve of expression as well as of respiration.

The surgeon, it is thought, will be able to derive advantage from these new views in performing operations upon the face, as well as in observing the symptoms of disease. But it is the physician who will chiefly profit, by being enabled better to distinguish between different kinds of paralysis; and in diseases of the lungs to mark the degree of the affection from observing the expression of the respiratory muscles. This is of the utmost importance in some insidious kinds of pneumonic inflammation, in which the pulse does not sufficiently indicate the danger.

By thus distinguishing and separating the nerves of respiration, the seeming intricacy in the branching of the nerves—their convergence to certain organs, their reunion and divergence, no longer a source of confusion, become now a subject of high interest. This crossing and reunion is ascertained to be for the purpose of associating the muscles into different classes, for combining them into subserviency to different organs, and placing them under the guidance of a sensibility more certain in its operation than the will.

Mr. Shaw assisted Mr. Bell in these experiments, and has adopted the same conclusions. In his remarks published in the Journal of Science, which are chiefly a repetition and illustration of these opinions, he has some interesting observations on the comparative size of the portio dura, and of the branches of the fifth in different animals. In man, in the monkey, and in the dog, its intricacy is in proportion to the number of muscles of expression. These are most numerous in the carnivorous tribes; while in the horse, ass, and cow, excepting a few twigs, which go to the eye and external ear, the whole of the respiratory nerve is confined to the muscles of the nostrils and mouth. There is a variety with regard to the camel, it being in that animal nearly as profusely spread out as in the carnivorous tribes. The anatomy of this animal, Mr. Shaw observes, is different from that of the greater number of quadrupeds. In the dissection of one which had been presented to his Majesty by Captain Lyon, the nerves of the neck, in number and distribution resembled those of a large bird.

As the proboscis of the elephant is an organ both of touch and respiration, it was thought that the dissection of it would afford a proof of the correctness or fallacy of Mr. Bell's opinion. An opportunity of dissecting a young elephant presented itself to Mr. Shaw, and the trunk was found to be supplied not only by branches of the fifth pair, as described by Cuvier, but also by a large branch of the portio dura.

M. Magendie has repeated these experiments, and has found the results to agree with what is stated by Mr. Bell, except so far as regards the influence of the suborbitary branch on mastication. He writes under the persuasion that Mr. Bell had found the power of mastication destroyed by cutting this suborbitary branch. M. Magendie's mistake on this point seems to have arisen from his not understanding Mr. Shaw's language, when conversing with him at Paris on the subject of these experiments. The opinion of this distinguished physiologist regarding these will be seen from his concluding sentence:—The discoveries, he says, of Mr Bell, appear an important step gained in our knowledge of the nervous system: his work is a fresh proof, that experiment is the only method by which real progress in science can be effected.—(*Quarterly Journal of Foreign Medicine and Surgery.*)

Unparalleled Instance of Suicide by Voluntary Starvation.—"Luc Antoine Viterbi was condemned to death as an accomplice in the assassination of Frediani, a crime which he denied to the last moment, and appealed against a sentence passed upon him by a court composed of his personal enemies.

"Towards the end of November, Viterbi, (knowing his condemnation, and being confined in the prison of Bastia,) resolved to die. To effect his purpose, he abstained from food for three days, and then ate voraciously, and to a forced excess, in the hope that, after fasting so long, he should thereby put an end to his existence. Nature deceived him, and, on the 2d of December, he determined to starve himself to death. From that day nothing could subdue this terrible resolve: although Viterbi, who had already sustained two dangerous attacks of illness, did not expire until the night of the 21st of that month.

"During the three first days, Viterbi, as was the case when he made the first attempt, felt himself progressively tormented by hunger, and did not endure these early sufferings with less courage than he had shown on the former occasion. Under these circumstances, a report was made to the public Minister, who ordered bread, water, wine and soup, to be taken daily to his cell and placed conspicuously in view. No debility was manifest during these three days, no irregular muscular movement was remarked, his ideas continued sound, and he wrote with his usual facility, but took no nourishment.

"From the 5th to the 6th, to hunger insensibly succeeded the much more grievous suffering of thirst, which became so acute, that on the 6th, without ever deviating from his resolution, he began to moisten his lips and mouth occasionally, and to gargle with a few drops of water, to relieve the burning pain in his throat; but he let nothing pass the organs of deglutition, being desirous not to assuage the most

insupportable cravings, but to mitigate a pain which might have shaken his resolution. On the 6th, his physical powers were a little weakened; his voice was, nevertheless, still sonorous, pulsation regular, and a natural heat equally extended over his whole frame. From the 3d to the 6th, he had continued to write, at night several hours of tranquil sleep seemed to suspend the progress of his sufferings, no change was observable in his mental faculties, and he complained of no local pain.

"Until the 10th the thirst had become more and more insupportable; Viterbi merely continued to gargle, without once swallowing a single drop of water; but in the course of the 10th, overcome by excess of pain, he seized the jug of water, which was near him, and drank immoderately. During the last three days, debility had made sensible progress, his voice became feeble, pulsation had declined, and the extremities were cold. Viterbi, however, continued to write; and sleep, each night, still afforded him several hours' ease.

"From the 10th to the 12th the symptoms made a slight progress. The constancy of Viterbi never yielded an instant; he dictated his journal, and afterwards approved and signed what had thus been written agreeably to his dictation. During the night of the 12th the symptoms assumed a more decided character, debility was extreme, pulsation scarcely sensible, his voice extraordinarily feeble, the cold had extended itself all over his body, and the pangs of thirst were more acute than ever. On the 13th the unhappy man, thinking himself at the point of death, again seized the jug of water, and drank twice, after which the cold became more severe; and, congratulating himself that death was nigh, Viterbi stretched himself on the bed, and said to the gendarmes who were guarding him, 'Look how well I have laid myself out.' At the expiration of a quarter of an hour, he asked for some brandy; the keeper not having any, he called for some wine, of which he took four spoonfuls. When he had swallowed these the cold suddenly ceased, heat returned, and Viterbi enjoyed a sleep of four hours.

"On awaking (on the morning of the 13th), and finding his powers restored, he fell into a rage with the keeper, protesting that they had deceived him, and then began beating his head violently against the wall of his prison, and would have inevitably killed himself, had he not been prevented by the gendarmes.

"During the two following days, he resisted his inclination to drink, but continued to gargle occasionally with water. During the two nights he suffered a little from exhaustion, but in the morning found himself rather relieved. It was then that he penned some stanzas.

"On the 16th, at five o'clock in the morning, his powers were almost annihilated, pulsation could hardly be felt, and his voice was almost wholly inaudible; his body was benumbed with cold, and it was thought that he was on the point of expiring.—At ten o'clock he began to feel better, pulsation was more sensible, his voice strengthened, and, finally, heat again extended over his frame, and in this state he continued during the whole of the 17th. From the latter day until the 20th, Viterbi only became more inexorable in his resolution to die.

"During the 19th, the pangs of hunger and thirst appeared more grievous than ever; so insufferable, indeed, were they, that, for the first time, Viterbi let a few tears escape him. But his invincible mind instantly spurned this human tribute. For a moment he seemed to have resumed his wonted energy, and said, in the presence of his guards and the jailer, 'I will persist, whatever may be the consequence; my mind shall be stronger than my body; my strength of mind does not vary, that of my body daily becomes weaker.'

"A little after this energetic expression, which showed the powerful influence of his moral faculties over his physical necessities, an icy coldness again assailed his body, the shiverings were frequent and dreadful, and his loins, in particular, were seized with a stone-like coldness, which extended itself down his thighs.

"During the 19th, a slight pain at intervals affected his heart, and, for the first time he felt a ringing sensation in his ears. At noon, on this day, his head became heavy; his sight, however, was perfect, and he conversed almost as usual, making some signs with his hands.

"On the 20th, Viterbi declared to the jailer and physician, that he would not again moisten his mouth; and, feeling the approach of death, he stretched himself on the bed, and asked the gendarmes, as he had on a former day, whether he was well laid out, and added, 'I am prepared to leave this world.' Death did not this time betray the hopes of a man who, perhaps, since the creation, invoked it with the greatest fervour, and to whom it seemed to deny its cheerless tranquillity.

"On the 21st, Viterbi was no more. Until the day of his death this man regularly kept his journal. The delivery of it to his family was refused."—(*From the Corsican Gazette.*)

Pulmonary Worms.—Mr. Rogers has made a discovery, which may ultimately prove of some importance. He says, "in making some microscopic experiments with small spherules of very high magnifying powers, I have observed that the matter, or pus, expectorated in a certain stage of pulmonary consumption, is actually filled with multitudes of minute worms; the forms of which, in their evolutions from the surrounding mucus, are so distinctly seen, as to obviate all doubt of their identity with living animalculi. I am induced to hope that an attentive consideration of the subject, by those professionally competent to its investigation, may tend to throw a light on the (at present) inscrutable cause of this malady. Is it unreasonable to regard these worms, the existence of which is indisputable, as forming the concomitant cause of consumption? And may not the irritation, consequent on the motions and gnawings of so many thousands of these vermin in so sensitive an organ, account for the restless excitability of the parts, the ulceration, and some other incidental symptoms? I have observed the worms to be killed, while under the microscope, by exposure to a particular kind of gas; which it might be imprudent, in this stage of the inquiry, to name."—(*London Medical and Physical Journal.*)

Russian Vapour Baths.—De Sudationibus Rossicis, Auct. Fred. Gregorio. Berlin, 1819.—In this Inaugural Dissertation is given a

very full and satisfactory account of the Russian Bagnio, or Vapour Bath; a subject hitherto not fully treated of: for the Treatises of Sanchez (Bemerkungen und untersuchungen über den Gebrauch der Dampfbäder bei Verschiedenen Völkem, in Russland. Russ. Memmimgen, 1789), and Martin (Abhandl. der Schwedischen Academie der Wissensch. Tom. XXVII. p. 69), are by no means satisfactory. The present Treatise gives not only the result of four years' experience in Russia, but also of several experiments made in Berlin, instituted with great care, and which throw much light on the subject. After a brief description of the Sweating Baths of the Ancients, the Arabians, Germans, Turks, Egyptians, and Finns, who, however, did not use the vapour of water, but a dry heat from 60° to 63° of Reaumur, (163°—173° Fahr.)* in low mud huts, formed like an oven, the author enters upon his particular subject. The furnace or stove is so constructed, as to heat the stones necessary for producing the vapour, and also so as to keep a quantity of water constantly boiling. Three or four rows of wood benches run round the room, one above the other, in order that every one may choose the degree of heat which he can best support. The floor is boarded and sloping, in order to run the water off. When the room is properly heated and filled with vapour, or the steam of water, the patient places himself upon the lowest bench, and after some time mounts higher, according as he can bear the degree of heat. The Russians are accustomed to spend three or four hours here, whilst every five or ten minutes fresh steam is produced. When an abundant sweat has been excited, they wash themselves with soap, and are rubbed down with birch rods; and, finally, some buckets of water, at first warm, then cold, are poured over their heads. Frequently they leap into a river, or roll about in the snow, to harden themselves; but this is only done when in perfect health. Dr. G. made many experiments in Russia;—the following are what he made in Berlin.

1*st Exp.*—A very healthy and tolerably robust young man, of 27 years, was first tried. The pulse in the antichamber at 20° of heat, (77° Fahr.) beat 78 strokes; the weight of the body was 122 pounds 2½ drachms. Soon after his entrance into the bath room, heated to 35° Reaum. (110° Fahr.), the whole skin was covered with the vapour of water, and, when rubbed off, a profuse sweat broke forth. After 10 minutes, the pulse rose to 112, the breathing remained free and not quickened. The temperature of the mouth and axillæ exceeded the heat of the blood only one degree. In 43° of heat (128° Fahr.), the sweat became still more profuse; pulse 132, and the temperature of the body exceeded the heat of the blood 2½ degrees; but not the slightest oppression of the breast was felt. After 8 minutes he mounted a higher bench, where the thermometer stood at 49° (142° Fahr.); soon after the pulse beat 150 strokes, and the difference of heat of the surface was 3½ degrees above blood heat, whilst the body appeared dissolved in sweat. The respiration was now more frequent, and at first somewhat oppressed, but soon became quite easy. After 6 minutes

* The comparison of Fahrenheit's with Reaumur's thermometer is not perfectly accurate, in order to avoid fractions.

the bather went out, and now weighed 121lb. ℥iv., but after sweating in the antiroom heated to 20° (77° Fahr.) covered with woollen clothes, he weighed only 120 pounds, ℥x. and ʒij. so that he had lost in the whole lbj. ℥ij. and ʒss. After the bath he felt uncommonly light all over, had a strong appetite and thirst, and slept unusually pleasantly.

The *2d Experiment*, tried in the same way upon a healthy but somewhat delicate young man, aged 22, showed nearly the same result. The frequency of the pulse, by a graduated increase of temperature, from 35° (110° Fahr.) to 50° (144° Fahr.) was increased from 84 to 170 beats; the respiration in the higher degrees of heat was very frequent and oppressive; so that at length fainting occurred, which soon ceased, by reposing a little in the antiroom. At 50° of heat, the temperature of the body was only 33° (106° Fahr.) The loss of weight in the body amounted to ℥xij. ʒv., the chief part of which was occasioned by being covered with woollens in the antichamber. After a short time, furfuraceous exfoliation of the cuticle occurred over the whole body.

3d Exp.—A young man of 25, and rather delicate, had laboured, during three days, under violent coryza, with severe headach, dryness of skin, and other febrile symptoms. The effects of the bath were very striking. Immediately on leaving it, the patient felt an agreeable sense of lightness, with a strong appetite and thirst, and the catarrhal symptoms did not return. During the bath, the affection of the chest was but slightly, and for a short time, increased, by changing to the higher temperatures. The pulse, before entering the bath, was 79; and at 49° of heat (142° Fahr.) rose to 150. The temperature of the body rose to 32½° (105° Fahr.), The loss of weight, immediately after the bath, amounted to ℥ix. ʒiss. After remaining half an hour in the antichamber, covered with flannels, it amounted to lbij.

To these Experiments are added the three following Observations. A man of spare habit, 28 years of age, used the Russian baths for an arthritic complaint; and had used already forty-five baths, on alternate days. After the fourth bath, the very violent pains had nearly disappeared. After the tenth, the tumour of the joints was considerably diminished. The patient remained each time an hour in the bath, exposed to a temperature of 44° (131° Fahr.), and was rubbed down with birchen rods. The loss of weight, on the whole, was lbij. ℥v. The pulse mounted from 75 to 140, but there was no difficulty of breathing.

Another man, 32 years old, and robust, used the Russian bath for chronic rheumatism in the right shoulder. The effects were as striking as in the former case. After the second bath, the pains had totally disappeared; and after the eighth, he could move his arm, which had been perfectly immovable! He staid only a quarter of an hour in the bath, and lost each time about lb i. ℥vi. In this case also, there was no affection of respiration, which appears, even when it occurs at first, gradually to diminish by repetition of the bath.

In a third case, the remedy was used by a very corpulent man 54 years of age, against arthritic contractions, which had resisted every other means. Sixty-three baths restored the perfect mobility of the

feet, though a little stiffness still remained in the neck. In this patient, after remaining half an hour in the bath, and reposing 25 minutes in the next room, the diminution of weight equalled lb. iij. ℥iv. It may be remarked, that the servant of the bath had, during four years, remained daily 12 hours in the bath, with perfect health, and feeling no other change except an increase of appetite and thirst. He drank 8 or 10 quarts of beer, and made each day about 2 quarts of urine. Dr. G. knew several in Russia who had followed this employment constantly during 15 or 20 years, without the slightest affection of their health.

Dr. G. considers the Russian vapour bath as the most active, certain, and, at the same time, using proper precautions, the most innocent diaphoretic remedy: one by which the circulation is powerfully excited, without danger of congestion in the head or chest; the lymphatics are stimulated to action, and a general pleasurable sensation induced. It is useful even to persons of a weak chest, provided no organic disease of the lungs, or suppuration, exists; whilst repeated experience shows them to be relieved. The dietetic use of baths cannot be doubted, on viewing the athletic health of the Russians, and the rareness of cutaneous diseases among them. In febrile diseases, Dr. G. has found the baths useful in Russia; for, during the typhous epidemic of 1812, few of his patients died who used them. It cannot be doubted that the baths would prove eminently useful in repelled acute diseases of the skin, and the sequelæ arising from this cause. Dr. G. has found them very useful in inflammations and puerperal fever, after bloodletting. It is also worthy of remark, that the latter disease appears very rarely in Russia, because the women, immediately after delivery, use the bath. Its use in chronic cutaneous diseases is now fully established; also in nervous diseases, chronic rheumatisms, gout, congestions, callosities, dropsy, and old syphilitic diseases. These observations induce us to wish that the use of this valuable and *cleanly* remedy was more generally adopted in this country.—(*Edinb. Med. and Surg. Jour. for Jan.* 1822.) T. M. W.

Prophylactic against Hydrophobia.—Cantharides, dissolved in vinegar, are usually employed, in Hungary, as a remedy against the bite of mad dogs, in the case of both man and animals. This preparation is taken internally.—(*Allgem. Mediz. Zeitung, April* 1821.)

Use of the Piper Cubeba in Leucorrhœa.—Dr. James Orr, of Edinburgh, has communicated to Dr. Duncan, jun. four cases of leucorrhœa cured by cubebs. In the first case, the patient had laboured under the disease for seven months. In the second, the complaint had lasted nearly eight years; in the third, it was of two years' standing; and in the fourth, the discharge had resisted the use of several remedies for six months. In the first three cases, the disease succeeded to abortion. The pepper was administered either in water or milk, or made into an electuary with treacle. The dose was from one drachm and a half and upwards, three times a-day, but never exceeded three drachms.—(*London Medical and Physical Journal.*)

Dr. Nimmo on the Seeds and Oil of Croton.—When the author of this very excellent paper first obtained the Croton oil, he found that

a part of it was dissolved by alcohol of sp. gr. 825. The portion that remained undissolved amounted to above a third of the original quantity, and possessed none of the characteristic acrimony of the oil, this property being entirely transferred to the alcoholic solution, which was found to answer the medicinal purposes of the entire oil, in a more certain manner, and unattended by several inconveniences formerly experienced from its use. Dr. Nimmo afterwards made a series of experiments upon the seeds of this plant. These furnished the following result.—

The *shells*, consisting of 36 parts, in 100 of the seeds, possessed no acrimony. 100 parts of the *kernels* of the Croton contained

27 of acrid purgative principle.
33 fixed oil.
40 farinaceous matter.

The oil itself is composed of 45 acrid principle.
55 fixed oil.

100.

The acrid substance appears to reside in a resinous principle, which is soluble in alcohol, sulphuric ether, volatile and fixed oils. Dr. N. is of opinion that later supplies of this oil have been much adulterated. He furnishes the following means of detection: "Let a very light phial be counterpoised in an accurate balance, pour into it 50 grains or more of the Croton oil, add alcohol which has been digested upon olive oil, of which it dissolves so little as not to injure, in the smallest degree, the alcoholic solution for subsequent use; agitate well, pour off the solution, and add more alcohol, in the same manner, until the dissolved portion is diffused in such a proportion of alcohol, that each half-dram measure shall contain equal to one dose of the Croton oil for an adult,—by placing the phial near a fire, to evaporate what remains of the alcohol in the bottle, if the remainder be to that which has been abstracted by the alcohol as 55 to 45, the oil is genuine,—if olive, or any other oil, little soluble in alcohol, has been added, the residuum will be in larger proportion. But if castor oil has been employed, the proportion of the residue will be smaller than in the genuine medicine."

The author has found the alcoholic solution to be the best vehicle for administering the active principle of the Croton oil, and for proportioning the dose to the various circumstances of cases under treatment. The following is the formula Dr. N. generally employs:

"℞ Alcohol. Croton. ʒss.
Syrupi simplicis,
Mucilag. Gum. Arab. āāʒij.
Aquæ distillatæ ℥ss. M.—

Fiat haustus.

"After swallowing a little milk, take the draught very quickly, and wash it down with repeated quantities of the same diluent." The author has already administered this remedy in upwards of one hundred cases. Vomiting was slightly produced in only three or four; "and in not many more was nausea felt. In all the cases purging was induced in a space of time between half an hour and three

hours after taking the medicine. The purgative effects were generally moderate," and rarely accompanied with griping. It was employed in one case of abdominal dropsy, in which other remedies had failed, at first cautiously and in small doses; it procured three or four watery stools daily, with a speedy reduction of the size of the abdomen. The irritability of the stomach interrupted its employment. It was again resumed, and combined with opiates and carminatives.

This method effected a perfect cure. The author has found it a powerful auxiliary to opium, in the cure of delirium tremens. Three cases appeared to be entirely removed by this combination. "In all instances in which there is a superfluity of bile regurgitating into the stomach, the alcoholic solution is of service, unless the medicine itself is rejected by vomiting, and in the removal of jaundice arising from obstruction or spasms in the bowels (perhaps equally in those of the biliary passages), it proved most beneficial." "In a case of excessive corpulence, with the most alarming symptoms of determination to the head, amounting at times almost to apoplexy, a few doses of the solution produced the most signal benefit."—(*London Medical Repository.*)

Treatment of Erysipelas.—It has been stated, on the authority of an American physician, that, in cases of erysipelas, particularly of that of the face, the application of mercurial ointment to the inflamed surface is speedily followed by beneficial results. Mr. Brodie, having had occasion to put this practice to the test of experience, found that, although its utility seemed unquestionable, a very serious inconvenience attended it,—namely, salivation. Being struck, at the same time, with the idea, that the benefit, obtained in such cases, was due, more to the adipose substance employed than to the metallic oxide combined with it, he imagined that the external application of a simple ointment might, probably, answer the same purpose. We have his authority to state, that this idea has proved correct in several instances of erysipelas, in which the simple ointment has been applied. The patient, after its application, has experienced an almost immediate relief; and the disease appeared to go through its various stages in a more favourable manner than under ordinary circumstances.—(*London Medical and Physical Journal.*)

Treatment of Mucous Polypi.—Dr. J. B. Rainer recommends the external application of tinctura opii crocata to the mucous polypi of the nose, as an effective means for their removal. He directs the patient to rub the polypus, three or four times a day, with the abovementioned preparation; and states that, in three days, a very sensible diminution takes place in the polypus, which disappears altogether in the space of three weeks. Two cases of polypi, one of them situated in the ear, effectually removed by this treatment, by Dr. Andrew, physician at Babenhausen, are related in the 56th Number of the Medizinischen Annalen for 1821.—(*Med. Chirurg. Zeitung.*)

On the Use of Belladonna as a Preservative against Scarlet Fever.—The observations made, twenty years ago, by Hahnemann, on the utility of belladonna in preserving from scarlet fever, have been confirmed by late experiments. In Hufeland's Journal, for August,

1820, there is a statement of facts in favour of that medicine. Dr. Berendt, (not Brandt, as some cotemporaries have stated,) an Austrian physician, gave, morning and evening, a few drops of a solution of three grains of the extract of belladonna in one ounce of water, to 195 children exposed to the contagion of scarlatina; fourteen of whom, only, became infected with that disease, which they had in a very mild degree.

During the last epidemical scarlet fever which raged in Copenhagen, and throughout Denmark, (1821,) this medicine proved extremely useful. Professor Herholdt, physician to the principal hospital in that metropolis, and one of its most eminent practitioners, has used a weaker solution of the extract, (two grains to one ounce of water,) and found it to answer the purpose of preserving several hundred children from the contagion. He observed, however, that the common and well-known effects of this medicine showed themselves in the little patients, when the dose of the solution, at any one time, amounted to twenty drops, and he therefore limited it to fifteen. The same author also prescribed it in a very recent epidemy; arrested, by it, the spreading of the contagion in families where the scarlet fever had made its appearance; and prevented its infecting most of the other families of which he was the attending physician.

Having remarked that the medicine ordered in the form of drops was more readily neglected in large families, Dr. Herholdt directed the extract of belladonna to be formed into lozenges, with a sufficient quantity of chocolate; and of these, each of which contained 1-32d part of a grain of the extract, he administered from one to three every morning and evening, according to the age of the patient. Out of nearly one hundred families, in which he had occasion to use the belladonna, one only was attacked by the scarlet fever, during the epidemy, in spite of the remedy. It is not certain whether, in this family, the individuals had not been infected previously to their taking the belladonna, or whether they had neglected taking it regularly. Dr. Herholdt thinks that the medicine does not act as a preservative, unless it be given long before the person is exposed to the contagion.—(*London Medical and Physical Journal.*)

On the Strong Evaporating Property of Camphor, employed as a Remedy in several Diseases. By Dr. Bodtcher.*—It is a well known fact, that camphor possesses a high power of evaporation; and that, when exposed to the open air, it soon diminishes in volume, and ultimately disappears altogether. A curious circumstance, connected with this fact, first directed Dr. Bödtcher's attention to the possibility of its being applied to the purposes of medicine. Happening to enter some years ago the pharmaceutical dispensary of Fridrik's-hospital in Copenhagen, while labouring under a very severe headach, some bottles containing camphorated mixture were brought in from the laboratory, and set on the ground not far from the doctor, who, after standing by them for a few minutes, found that his headach had entirely left him. This induced him to try the effect of the vapour of camphor, in other complaints, and particularly in those where the camphor itself, or any of its preparations, could not be well applied, as, for instance, in com-

* From the Danish Journal, intitled, "Bibliothek for Lœger."

plaints affecting the cavities of the nose, the throat, and chest. The success, said to have followed this new mode of employing camphor as a medicine, is most encouraging. In the worst cases of complete stoppage at the nose, (snuffles,) a piece of camphor need only be kept for a few minutes before that organ, and the patient will, in a short time, be relieved. In inflammation of the eyes it has also proved useful, when held at intervals before them. In cynanche, kept either before the open mouth or the nose, it has produced the best effects. As gargles with camphor, however useful in this complaint, are not always admissible, the knowledge of the fact mentioned by Dr. Bödtcher may be of great service to practitioners. In the latter disease, the vapour of warm water might be directed to be inhaled with some camphor previously mixed in it. The vapour of camphor has been found very beneficial in common and spasmodic coughs, and even in croup it would be of use, if resorted to in time. The same observation may be made with regard to all kinds of inflammations of the chest.

When gout and rheumatism attack the internal organs, this important remedial agent ought not to be neglected. Experience teaches us that, when camphor is applied to the external parts of the body affected by either of those diseases, the latter will often quit, suddenly, their original seats, and settle, not without great danger, on the internal organs. When this has been the case, the inhaling of the vapour of camphor, Dr. Bödtcher thinks, will be found of great service. In all such cases, it would, perhaps, be better to keep a small piece of camphor in the mouth, in order to secure the benefit of its evaporation.—(*London Medical and Physical Journal.*)

Ligatures on the Extremities recommended in certain Diseases.—Dr. Franz, of Lissa, in Bohemia, details the case of a young woman, of seventeen years of age, who complained of a difficult, interrupted, and hurried respiration; accompanied also with pain, shooting through the region of the heart, which prevented the possibility of a profound or lengthened inspiration. The countenance was very florid, and slightly tumefied; the pulse small, hard, and contracted; the artery felt stretched as a cord. Dr. F. prescribed tonics, with musk, and other antispasmodics; and the warm bath, with antispasmodic enemata, without any advantage. He afterwards had recourse to the application of ligatures upon the extremities, as they are recommended by J. P. Frank, in his chapter "*de spirandi difficultate*," in nervous habits. "Ligatura supra cubitum et genu injecta mirabile hinc inde levamen attulit." They were accordingly applied above both knees, and above the left elbow. The relief produced was both instantaneous and complete. The respiration and the pulse became freer, softer, and more tranquil; the flush in the countenance disappeared, and she was enabled to leave her bed. The ligatures were applied during three hours, when the pain and swelling which they occasioned required their removal. As soon as they were relaxed (especially the one on the left arm,) the spasms of the chest returned. They were again applied, and the relief was as immediate as before. Those upon the lower extremities were afterwards removed, and that on the

arm retained for some time, and relaxed at intervals. There was no return of the disease, and the patient rapidly recovered.

Dr. Franz found the same method successful in a similar case which subsequently came under his care; no other treatment was employed at the same time in either instance.

The symptoms detailed by Dr. Franz would appear, in our opinion, to have required blood-letting. Did not the ligatures, however, operate in a somewhat similar manner,—namely, by intercepting the return of blood to the heart, and thereby allowing that organ to overcome the distention of its cavities and neighbouring large vessels, which had previously existed, and which most probably had been the cause of the symptoms described? The relaxation of all the ligatures, if not gradually performed, would occasion, by the sudden and overwhelming flow of blood to the right side of the heart, a recurrence of the symptoms, which were merely the efforts of that organ to relieve itself, accompanied with those signs of irritation and spasm which are generally the concomitants of action induced in any part beyond its natural functions.

We would recommend the same method, as deserving of a trial in similar affections; at least in such cases wherein a pathology such as that just alluded to may be presumed to exist.—(*London Medical Repository.*)

Memoire sur les Teintures, &c.—Memoir on the compound Alcoholic Tinctures, Wines, &c. By M. Grammaire, Apothecary.—The point to which the observations detailed by M. Grammaire are principally directed, is, that in the Pharmaceutical preparations of compound tinctures, the *mode* of preparation as well as the quantity and degree of concentration of the alcohol, influences in no small degree the nature of the product. He shows, by a series of experiments, that in the usual method of macerating the different substances together in the alcohol, we obtain no fixed proportions of active principles; and that the tincture thus formed, contains a third, fourth, and sometimes even one half less of resinous or extractive principle, than when each of the ingredients is separately macerated in the alcohol, and the several tinctures, thus prepared, are afterwards mixed.

The following, out of a great many trials, according to the new process and that ordered in the pharmacopœia, will illustrate and confirm the author's observations and deductions:—

TINCTURA CATHARTICA.

PREPARED ACCORDING TO THE CODEX.	PREPARED ACCORDING TO THE NEW PROCESS.
Take of Jalap Root, 2 drams and 2 scruples Turbith root, 1 scruple Scammony, 2 scruples Alcohol, 4 ounces	Take of Jalap Root, 2 drams and 2 scruples Alcohol, 2 ounces Turbith Root, 1 scruple Alcohol, half an ounce Scammony, 2 scruples Alcohol, 1½ ounce
Macerate all the substances for fifteen days in the alcohol.	Macerate, separately, for the requisite time, and then mix the several tinctures.

The quantity of extractive principle obtained by operating according to the first process, is 58 grains, whereas, in the new process, it amounts to 102. So that by treating the tinctures separately, we obtain a much stronger product; and by ascertaining the quantity of active principle taken up by the alcohol from each substance, we know precisely the relative proportions of the ingredients in the tincture; and consequently arrive at greater certainty and precision in the administration of such medicines.—(*London Medical Intelligencer.*)

Chemical Examination of Cubebs. By M. Vauquelin.—Cubebs are the fruit of the piper cubeba (triandria trigynia), a perennial plant, which grows in the Philippine Islands, in Java, Guinea, and the Isle of France.

These grains do not all possess the same colour; they are rounded, and attached to a stalk. If they are examined after being macerated in water, four coverings are discoverable; the first is fleshy, and softens in water; the second is of a grey colour, and is nearly transparent; the third is thin, like the peel of an onion, of a yellowish-brown colour; the fourth is a very thin, white pellicle, immediately covering the grains, some of which are round, and entirely fill their covering; others are flat on one side, and rounded on the other; others, again, are wrinkled, and covered with fatty matter; and, lastly, there are some which are of a white colour.

A careful analysis shows that the cubebs contain the following substances:—

1. A volatile oil, which is nearly solid.
2. Resin, resembling that of balsam copaiva.
3. A quantity of another and coloured resin.
4. A coloured gummy matter.
5. An extractive principle, similar to that which is found in leguminous plants.
6. Some saline substances.—(*Annals of Philosophy.*)

*On a Deposit found in the Waters of Lucca.** By Sir Humphrey Davy. Bart., P. R. S., &c.—The waters of the baths at Lucca, at the spot where the temperature is the greatest, that is to say, in what are termed the caldi, or hot baths, eject in a considerable quantity a substance that produces a deposit of a brownish-yellow hue. Having collected various quantities of this deposit, and having submitted it to chemical experiments, I have discovered it to be a compound of oxide of iron and silica. Not having a balance sufficiently accurate, it was impossible for me to ascertain, with precision, the exact proportions. In the single experiment, however, that I made for this purpose, the oxide of iron was, to the silica, in the proportion of 4 to 3.

It is extremely probable that the oxide of iron and the silica had been dissolved together in the water, and deposited at the same time, because the silica, being separated from the oxide by means of a weak acid, it appears to resemble gelatine; and because the deposit, when

* The waters of Lucca are much frequented by invalids from different parts, more especially by sufferers from intermittent and remittent fevers; and by those who are recovering from diseases of the spleen, or labouring under its chronic obstructions.—Editor.

examined in its natural state, was found to be uniform in its substance, even when looked at through a lens.

Although the oxide of iron, when first discovered, proves to be peroxide, it is nevertheless very probable, that it exists in the water in the form of protoxide, or that it is converted into peroxide by the action of the air which is dissolved in the water. The probability of this opinion is further confirmed by the circumstance, that the colour of the water is not changed by the addition of the triple prussiate of iron, nor by that of gallic acid, it being well known that protoxides generally have a greater deposition than peroxides.

The analogy which I established some time since, during my researches as to the decomposition of alkalies and earths, between the base of silica, and that of boracic acid; and the facts described by MM. Smithson and Berzelius, furnish reasons for classing silica among the acids; and it seems probable that the oxide of iron and the silica undergo a real chemical combination in the warm water; and that they separate from it in consequence of its cooling, after issuing from the mountain.

A small portion of oxide of iron is found in the Bath waters, where likewise it is accompanied with silica; nor is it improbable, that this earth is in many cases the cause of the oxide of iron being dissolved in the water; and these facts combined, furnish us probably with an explanation of the manner in which ochre is generated. As to what may be the effect of the combination of oxide of iron and silica on animal bodies, it is the province of medical men to examine, and to determine upon, after long and adequate experiments.—(*Ann. of Philosophy.*)

Use of Sub-nitrate of Bismuth in Intermittent Fevers.—Dr. Henkersew, a physician at Hildesheim, has been in the habit of prescribing this remedy in agues, for several years. He considers it to be a powerful febrifuge and anti-spasmodic. He exhibits this salt in the dose of four grains, with a few grains of sugar, every two hours.—(*London Medical and Physical Journal.*)

Hydrocyanic Acid.—Mr. Bush has been in the habit, for some time past, of using, pretty extensively, a form of medicine, the suggestion of which, he says, he owes to our Treatise on Prussic Acid, (*qy.* the second edition?) We mean the emulsion of bitter almonds, in which, as it is well known, prussic acid is naturally present. "Having witnessed," says he, "most beneficial effects from the acid, in its chemical concentrated form, in cases of pulmonary irritation and spasmodic cough, I determined to try a mixture of the bitter almond, as containing the principle in a natural state: this medicine I have given, for the last two years, with considerable success. I have the mixture prepared from a confection made in conformity to the recipe for the Confectio Amygdalæ in the Pharmacopœia Londinensis, only substituting the bitter for the sweet almond; and have given the mixture, thus prepared from a confection of bitter almonds, in doses of an ounce, or an ounce and a half every four hours: sometimes I have added to each dose a few drops of tinct. scillæ, or tinct. opii camph. I am fully convinced that this medicine is a useful addition to our

pharmaceutical preparations: the ease with which it may be at all times prepared, and the certainty of its being in a state of purity, are, I consider, strong recommendations to its use. I have, in a few instances, seen it produce sickness, when given in large doses: where that has been the case, the dose has been lessened, but the medicine continued with advantage.—(*Ibid.*)

Preparation of Ethiop's Mineral.—Dr. Taddei recommends the following process for the preparation of this substance, as being one which effects the combination immediately, and in a more perfect manner than that generally employed.—Put one part of sulphuret of potash into a mortar, with three or four parts of running mercury; triturate together, adding a little water by degrees, until the whole is reduced to a homogeneous black paste; then add flowers of sulphur, in equal quantity to the mercury employed, and mix the whole by a short trituration. Then wash the whole; and filter with repeated portions of water, till all the alkaline sulphuret is removed.

Ethiops thus prepared is not of the black colour of that obtained by simple trituration, but it is a more perfect combination. Dr. Taddei says, that the addition of a little sulphuret of potassa to the mixture of sulphur and mercury, does not do away with a long trituration, but that, proceeding as above, the substance is prepared instantly.—(*Ibid.*)

On the heat of Solutions crystallized by exposure to air.—When a hot saturated solution of Glauber's salt is suffered to cool in a closed flask or phial, it remains fluid until the stopper is removed, when it immediately crystallizes, and its temperature becomes elevated. Dr. Thomson has lately experimented on this phenomenon; not with a view of ascertaining the cause of the crystallization, but on the source of the heat evolved. Sulphate of soda and carbonate of soda were the salts used; 51 parts of crystallized sulphate of soda to 49 parts of water, make a good solution for the experiment. If carbonate of soda be used, 1 part should be dissolved in 4.22 parts of water, and the solution suffered to cool below 50° F. When the sulphate of soda is used, the crystallization of the mass is certain, at a temperature under 50°, on removing the stopper, and the rise of temperature equals 24° F. If the carbonate be used immediately the cork is drawn, an abundant precipitation of small crystals in stars take place, and the temperature rises 14° F. From estimation made of the rise of temperature; the whole quantity of matter heated; the quantity of salt solidified; of water of crystallization combined with it, &c. &c., Dr. Thomson concludes, that the latent heat of the water of crystallization was, in both cases, the sole source of the increase of temperature observed.—(*Annal. Phil.*)

Vaccine Board.—A return of the establishment and expenses of the National Vaccine Board, stating the name, office, and salary of each person, the place of residence, also the amount of contingent expenses, for the year ending 5th January, 1822:—

MEMBERS OF THE BOARD, VIZ.

	£	s.	d.
Sir Henry Halford, Bart. President of the College of Physicians, Curzon-street.	100	0	0
Dr. Algernon Frampton, Censor of the College of Physicians, New Broad-street.	100	0	0
Dr. Thomas Hume, ditto, South-street, Grosvenor-square.	100	0	0
Dr. Charles Badham, ditto, Berkeley-square.	100	0	0
Dr. Robert Lloyd, ditto, Grosvenor-street.	100	0	0
Sir Everard Home, Bart. President of the College of Surgeons, Sackville-street.	100	0	0
Sir William Blizard, Knt. Devonshire-square, } Vice-Presidents	100	0	0
Henry Cline, esq. Lincoln's-Inn Fields. } of ditto.	100	0	0
Director—James Moore, esq. Conduit-street.	200	0	0
Registrar—Dr. James Hervey, No 18, Percy-street.	300	0	0
Secretary—C. Murray, esq. 13, John-street, Bedford-row.	50	0	0

STATIONARY VACCINATORS.

Mr. J. C. Carpue, principal station, 18, Percy-street.	150	0	0
Mr. J. Addington, 5, Raven-row, Spitalfields.	100	0	0
Mr. C. Aikin, 4, Broad-Street Buildings.	100	0	0
Mr. J. A. Gillham, school-room, near Surrey Chapel, Blackfriars-Road.	100	0	0
Mr. Edw. Leese, Gloucester-place.	100	0	0
Mr. Sawrey, 27, Bedford-row.	100	0	0
Mr. Fred. Ager, 141, High-street, Whitechapel.	50	0	0
Mr. J. Barnett, St. John-street, West Smithfield.	50	0	0
Mr. Jos. Freeman, 20, Spring Gardens.	50	0	0
Mr. J. P. Peregrine, 3, Halfmoon-street.	50	0	0
Mr. J. H. Sterry, Alscot-place, Grange-road, Bermondsey.	50	0	0
Mr. Jos. Ward, Wellclose-square.	50	0	0
Rent of Furnished House, No. 18, Percy-street.	260	0	0
Housekeeper.	40	0	0
Messenger. 1*l.* per week.	52	0	0
To E Williams, stationer, 11, Strand.	21	12	3
—J. C. Parker, for squares of glass, Spur-street, Leicester-fields.	24	10	3
—J. Thompson, for ivory points, Great Windmill-street.	42	0	0
—J. Brettell, for printing.	22	11	6
—R. Hattersley, for platina vaccinators.	4	2	4
—F. Pastorelli, for glass tubes, Cross-street, Hatton-garden.	0	10	6
—W. Winfield, for coals, Hungerford Wharf, Strand.	25	10	6
—Sundry small sums in Registrar's petty cash-book.	17	10	8
—Audit dinner, 4th July, 1821. 17*l.* 3*s.* 0*d.* Deduct fines paid by the members. 7 2 6	10	0	6
—Postchaise for Senior Censor and Director, to visit some cases at Cheam School, Surrey.	1	15	6
—Stamps for payment of salaries.	2	16	0
	£2,825	0	0

	£	s.	d.
Brought forward. . . .	2,825	0	0
December 10, 1821.—Mr. J. Ring, of Charlotte-street, Rathbone-place, was appointed to a station, Castle-street, Oxford-market, held by the late Mr. Ring—Salary 50*l.*; rent of station 25*l.*	75	0	0
	£2,900	0	0

GEO. GILB. CURREY, M.D. F.R.S.
Treasurer of the College of Physicians, and to the National Vaccine Board.

February 19, 1822;
40, *Halfmoon-street, Piccadilly.*

Dr. Jenning's right to the Discovery of the Steam Bath.*—As preliminaries, essential to the cure of syphilis without mercury, Sintelaer enumerates different kinds of sweating. The first and most effectual, he observes, is by means of spirit of wine. And here Sintelaer anticipates Dr. Gower in this country, and an American practitioner, who is in a great rage with us for not attributing to him the original invention of this process. The following extract will set all claimants silent.

"In bed it is performed thus: the patient is laid quite naked in bed, and over his body are extended three or four half hoops, in order to keep the bed-clothes from touching his naked body; this done, you must place near the bedside of the patient, a square tin box, with a small door on one side, and a tin pipe on the top, of such a length as to reach up to the bed-clothes, or rather to the height of the bedstead itself where the patient is laid. Things being thus prepared, you must put a small kettle or other vessel into the door of the beforesaid tin box, and put into it some spirit of wine, which being set on fire, the vapour thereof will ascend through the pipe (one end of which is put under the bed-clothes) to the body of the patient and make it sweat most plentifully in a little time, which you may continue as long as you see it convenient; you must take care not to put in too much brandy or spirit of wine at a time, which would burn too fast, but do it gradually, and as often as you find the brandy consumed, supply it with fresh."—(*Medico-Chirurgical Review.*)

New French Medical Journal.—Dr. Broussais, whom we have had frequent occasions of introducing to our readers, has transmitted to us the prospectus of a new Medical Journal, intitled "Annals of Physiological Medicine;" to be edited by Dr. Broussais himself, and destined to record the principal facts and doctrines connected with what he has denominated the physio-pathological school. This journal will be published monthly, and the first number of it was to have appeared in January; but as yet we have not received it. The first part is intended to contain original communications relative to cases of disease treated according to the editor's own peculiar system; and the analysis of medical works deserving of consideration. The second

* Dr. Sintelaer's work was published in London in 1709.

part will be entirely consecrated to the development of the Broussaian doctrine; beginning with physiology, and gradually extending to every branch of medical studies, so arranged that, at the end of a certain period, the reader will be able to have the different parts of the journal bound separately, and will thus possess complete treatises on those various subjects.—(*Lond. Med. and Phys. Journal.*)

Mr. Mapleson's Directions for the operation of Cupping.—1. "The first step in the operation of cupping is to produce a partial vacuum over one or more portions of the surface of the skin.

2. "The mode now, I believe, universally adopted by regular cuppers, is the momentary introduction of the flame of a spirit-lamp, with a thick wick: the larger the glass, (if properly exhausted,) the less pain does the patient suffer, and the more freely does the blood flow.

3. "When about to perform the operation, let there be provided a hand-basin with warm water, a piece of fine sponge, and a lighted candle. Place as many glasses in the basin as may be judged requisite to obtain the quantity of blood intended to be taken away. If sixteen or twenty ounces are ordered, four glasses, of a size adapted to the surface, will in most cases be required. Each glass is then separately to be held, for an *instant*, over the flame of the spirit-lamp, and immediately placed upon the skin of the patient. Upon the quickness with which this is effected, depends the whole neatness and efficacy of the operation.—To obviate their want of dexterity, many operators in the country throw a little bit of tow or paper, dipped in spirits and inflamed, into the cupping-glass, the moment before it is applied; a very clumsy expedient, often adding unnecessarily to the sufferings of the patient by cauterizing the skin; doing harm, also by rarefying the air more than necessary within the glass, in consequence of which the edges of the cup compress the cutaneous vessels so much as to obstruct the influx of the blood.

4. "If the glasses have been duly exhausted, the skin will be seen gradually to swell up within the cup, owing to the pressure of the air upon the parts in the vicinity, as well as to the expansion of the fluids contained in the cellular membrane. The skin becomes also of a dark purple colour, owing to the influx of blood into the smaller vessels. If dry cupping be only intended, the glasses may be allowed to remain on the skin for a few moments, and replaced five or six times, varying their position a little, to prevent bruising the skin. If the intention be to scarify and take away blood, the glass ought not to remain more than a minute; when it is to be removed by gently introducing the nail of the fore-finger under the edge, and the scarificator *instantly* applied, and the lancets discharged upon the skin, before the tumour has had time to subside. Upon the rapidity or slowness with which the application of the scarificator succeeds the removal of the glass, depends all the sufferings of the patient. If the skin has completely subsided before the stroke of the lancets, much unnecessary pain is inflicted.

5. "The glasses are thus to be removed and reapplied successively. They should be a second time removed, if necessary, as soon as the blood is perceived to coagulate within them, or when they are so full as to be in danger of dropping off. For the sake of neatness, care

should be taken to insert the nail under the upper part of the glass, and open them downwards; gently wiping the wounds at the same time with a warm moist sponge.

6. "The glasses, previous to every application, should be rinsed in the warm water, but not dried. To obviate the unpleasant sensation produced by the coldness of the metal, it is advisable to pass the instrument for a moment over the flame of the lamp before using.

7. "When the operation is finished, it is common to apply a piece of fine linen rag to the wounds; but, if the patient does not object to a little smarting, either arquebusade water or spirits of wine is a preferable application, as it immediately stops the oozing of the blood, promotes the healing of the wounds, and prevents the subsequent itching, which I have heard some patients complain of, as the most unpleasant part of the operation.

8. "It is a common error to make the incisions too deep, especially if the object be to take away much blood; being convinced that nothing is gained by going deeper than the cutis, or true skin, while an unnecessary increase of pain is caused to the patient.

9. "It is certainly preferable to make the incisions in the direction of the fibres of the subjacent muscles; but it is not of much importance, as, in my opinion, the incisions ought never to penetrate so deep as the muscular flesh.

10. "No step in the operation of cupping demands more the attention of the operator than the state of his scarificators. If not exquisitely keen, they occasion unnecessary pain; if foul or rusty, they may communicate disease, or give rise to festering sores. The lancets or cutters should be kept as sharp and in as fine order as possible, so as to make a clean incision, without bruising or giving fruitless pain.

11. "The intention of the operation is, I believe, frequently defeated, from want of attention to these apparently trivial circumstances."—(*London Medical and Physical Journal.*)

Medical Antiquities.—Dr. Rochoux has lately discovered a curious monument in the gardens of the Capucins of Sarria, a village in the neighbourhood of Barcelona, destined to preserve the memory of a pestilential disease with which this place was afflicted, in 1651, at the same time with that city, and which, according to Capmani, was the most dangerous and most violent since the *black pest* of 1348, of thirty-one epidemics that have ravaged Barcelona since 1330. Dr. Rochoux describes this monument to be composed of different groups of individuals, formed from a baked earth and coloured. Of these the largest does not much surpass the fourth part of the common size of the human subject. These groups form a procession which ranges along the exterior of a church. In the midst of a number of assistants, a man appears to fall, struck by the disease. Beyond this central point are observed the sick, the dying, and the dead; the former receiving the kind assistance of, the latter carried by, monks All these present red blotches, or sores, on the sides, or at the posterior part of the neck, on the arms, and on the limbs. Two of the sick are represented in the act of vomiting; one of these, who are coloured *a dark yellow*,

is ejecting an abundance of black matter; another is applying his hand to his mouth, as in the act of arresting the escape of the matter, with which his distended cheeks appear to be filled. Their eyelids possess a copperish red colour. A monk appears sustaining the head of one in the one hand, while, with the other, he holds a vessel containing some potion.

On the same monument is represented a small edifice of two floors, covered by mourning drapery and funeral emblems. It is open on one side, and allows the eleven dead monks to be seen, three being placed on the second floor, four on the first, and four on the ground floor. Underneath, the following inscription appears in the Catalan dialect:—

"Noms dels onse religiosos que moriren de la pesta, en lo anii 1652, assistin in lo spiritual y temporal al poble de Sarria essent affligit de tal contagi; y son enterrats bain est panteon: *P. F. Fructuos Rialp, etc. etc.*"*

It is apparent from this monument, that a disease ravaged this part of Spain, which was characterized *by yellowness of the skin, by black vomitings, and by red-coloured blotches or sores on different parts of the body;* and which appears, from these signs, to have been neither the true plague nor the yellow fever, but, in some points, to have resembled the epidemic very lately raging in that city.—(*Nouv. Journ. de Med. Fev.* 1822, *p.* 178.)

The Oil of Turpentine rendered more palatable.—Dr. Nimmo employs the following method to purify the oil of turpentine, for medicinal use, "without diminishing its efficacy, but greatly lessening its disagreeable taste, and its injurious effects upon the kidneys." To eight parts of the oil add one part of the strongest alcohol, and let them be well agitated; in a few minutes a separation takes place; the oil, unless very impure, falls to the bottom, and the alcohol, having dissolved the impurities, floats at the top. Pour off the alcholic portion, add an equal quantity of alcohol as before, agitate and separate the liquids. If this be repeated three or four times, the oil becomes nearly tasteless, almost without smell, and when a portion of it is evaporated, it leaves no residue. It is necessary to remark, that pure as the oil may be rendered, it speedily undergoes alteration, and returns to its original state of greater or less impurity.—(*London Medical Repository.*)

QUARTERLY LIST OF NEW FOREIGN MEDICAL PUBLICATIONS.

An inquiry into the opinions, ancient and modern, concerning Life and Organization. By John Barclay, M. D. Lecturer on Anatomy and Surgery; Fellow of the Royal College of Physicians, and of

* "To the memory of the eleven religious individuals who died of the plague in the year 1652, having been seized by this malady while they were engaged in rendering spiritual and temporal assistance to the inhabitants of Sarria. They repose beneath this monument: *P. F. Fructuos Rialp, etc. etc.*"

the Royal Society of Edinburgh, &c. &c. Edinburgh, 1822, pp. 542. Price 14s. boards.

Essays on Surgery and Midwifery; with Select Observations and Cases. By James Barlow, Surgeon: with plates. London, 1822 pp. 417. Price 12s. boards.

History of Cultivated Vegetables; comprising their Botanical, Medicinal, Edible, and Chemical Qualities; Natural History; and relation to Art, Science, and Commerce. By Henry Phillips. In 2 vols. London, 1822. Price £1. 11s. 6*d*.

The Pathology of Fever; being the subject of the Gulstonian Lecture, lately delivered at the Royal College of Physicians. By J. R. Park, M.D. Fellow of the College. London, 1822. pp. 161. Price 6s.

A Manual of the Climate and Diseases of Tropical Countries; in which a practical view of the Statistical Pathology, and of the History and Treatment of the Diseases of those countries is attempted to be given: calculated chiefly as a Guide to the young Medical Practitioner on his first resorting to those countries. By Colin Chisholm, M.D. F.R.S. &c. 1 vol. 8vo. closely printed. pp. 336, with a plate. London, 1822.

Reflections on Gall and Spurzheim's System of Physiognomy and Phrenology. By John Abernethey, F.R.S. 8vo. Price 3s.

Observations on some points of Medical Ethics. By Henry B. Evanson, M. B., M.R.I.A., &c. &c. Cork, 1822. 8vo. pp. 56.

Mémoire sur la Perforation de la Membrane du Tympan. Par Deleau, le jeune, Doct. en Med. &c. Paris, 1822. pp. 182. 8vo. Price 4*s*. 6*d*.

Considérations sur une alteration Organique appelé Dégenerescence Noire, Mélanose, Cancer Mélané, &c. Par G. Breschet, Chef des travaux anatomique à la Faculté de Médecine de Paris, &c. &c. 8vo. pp. 24, with one coloured plate representing the Mélanose. Paris, 1821.

Mémoire sur le Vomissement considéré dans l'Etat sain et dans les maladies cancéreuses de l'Estomac. Par M. Piedagnel, Interne de première classe des hopitaux et hospices civiles de Paris, Prosecteur á l'Athénée Royale. Paris, 1821. 8vo. pp. 29.

Causes des Maladies Epidémiques, Moyens d'y remédier et de les prévenir; avec quelques Réflexions sur l'Epidémie d'Espagne. Par M. Lapis, D.M., &c. Paris, 1822. 8vo. pp. 333.

Voyage Médical en Italie, fait en l'Armée, 1820. Par le Docteur Louis Valentin, &c. A Nancy, 1822. 8vo. pp. 166.

Del Metodo di Curare, dell' Insegnamento Medico-Clinico, e di alcuni Stabilimenti di Publica Beneficenza, osservati in Inghilterra. Discorso pronunciato nella Clinica Medica della Pontificia Universita di Bologna, il 26 Marzo, 1821. Bal Professore Giacomo Tommasini, &c.

Lezioni di Materia Medica del Dottor Ottaviano Targioni Tozzetti, Professore di Botanica e Materia Medica. Firenze, 1821. pp. 360.